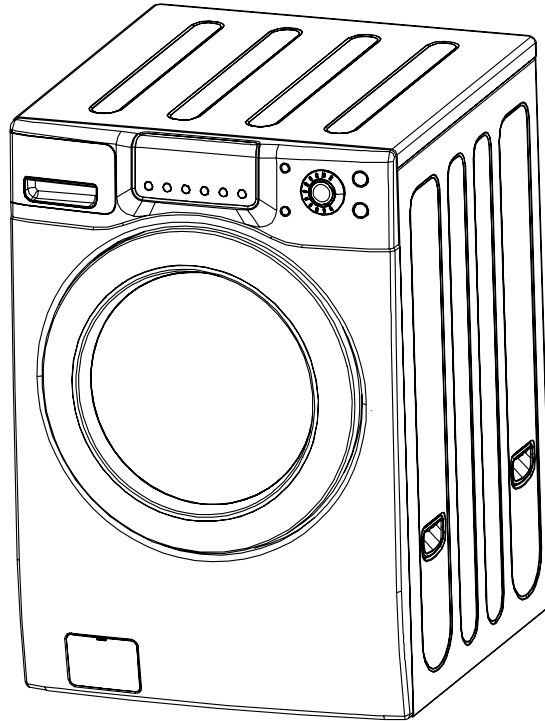


Service Manual

**unique
Klasse**

KUD-WC1113

KUD-WD1117



DRUM WASHING MACHINE SERVICE GUIDE

1. WHAT IS DRUM?	2
2. SPECIFICATION OF DRUM WASHING MACHINE	6
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1. WHAT IS DRUM ?

1. WHAT IS DRUM WASHER?

One of the famous washers in the globe which uses laundry falling energy.

2. Sales point of our washer

The biggest capacity with compact size

No damage and entanglement but excellent washability

4way savings - noise, vibration, washing times, energy

Self - cleaning course of Drum

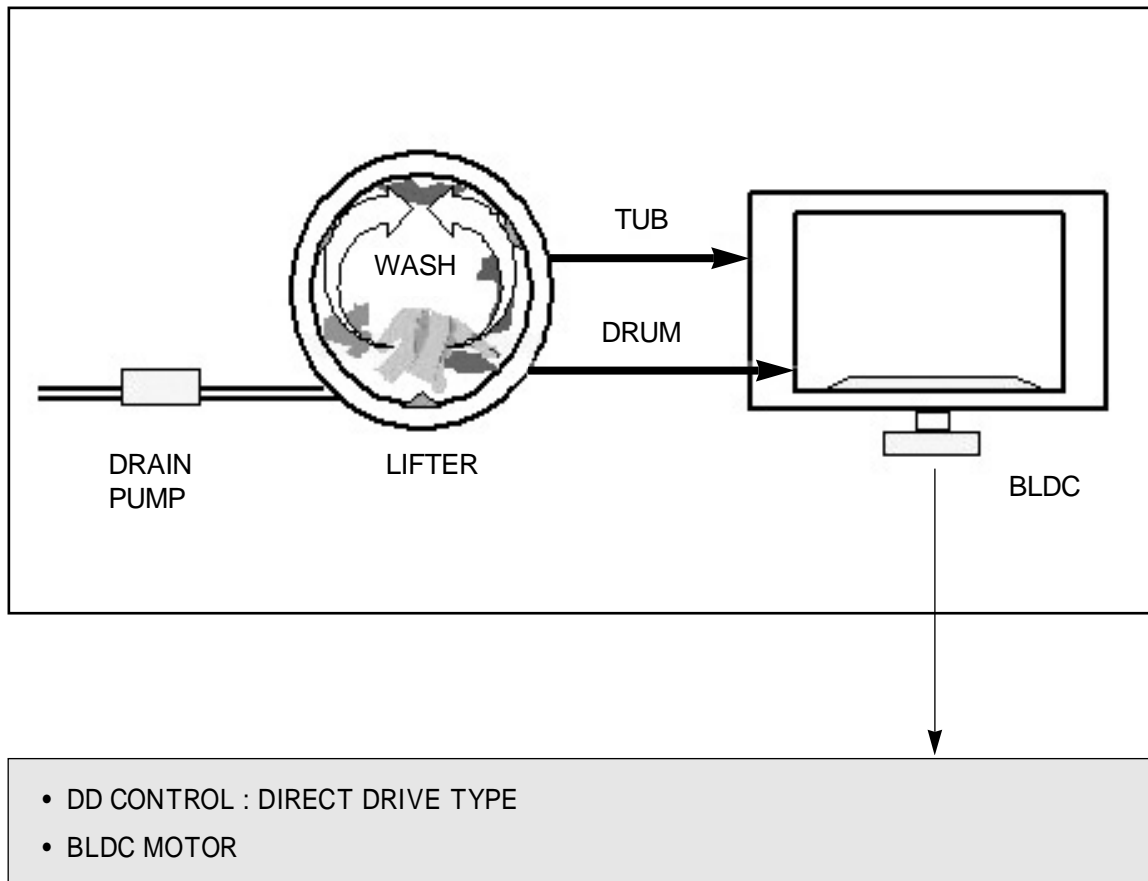
Good washing performance with heating system

Condensing dry system with saving energy

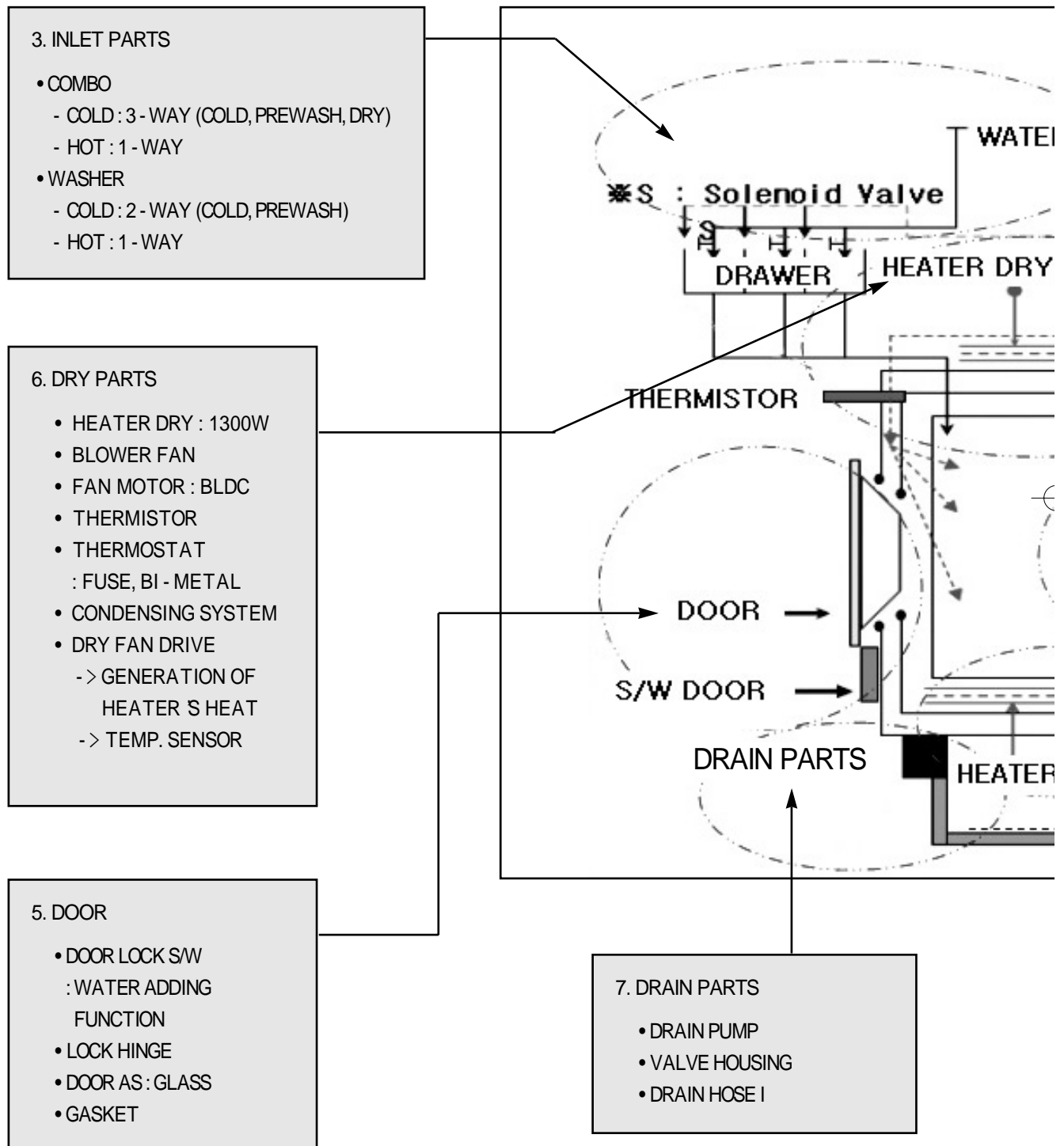
Big door glass with easy laundry take - in/out

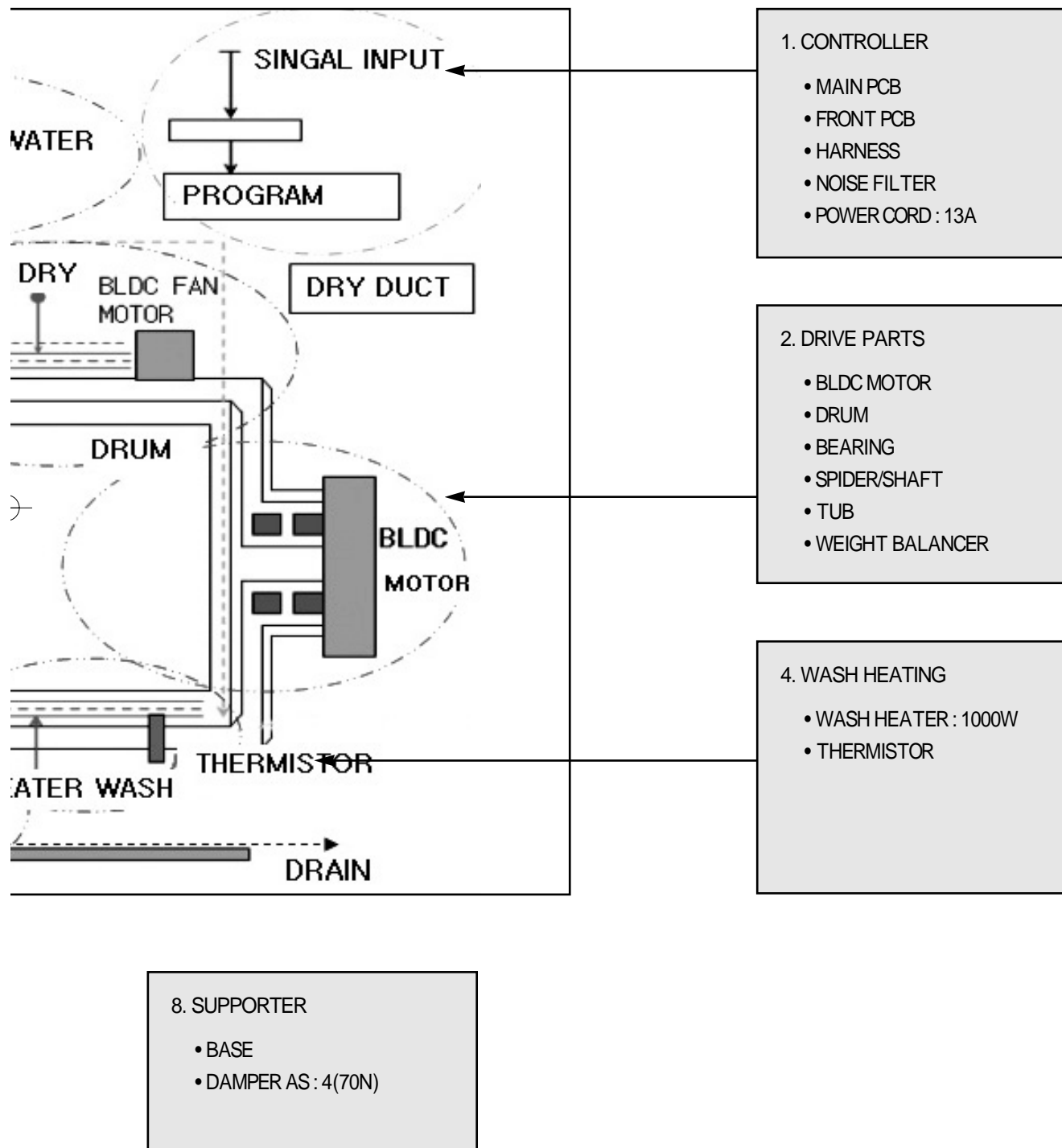
The highest spin speed

3. THE DRIVE SYSTEM OF DRUM WASHING MACHINE



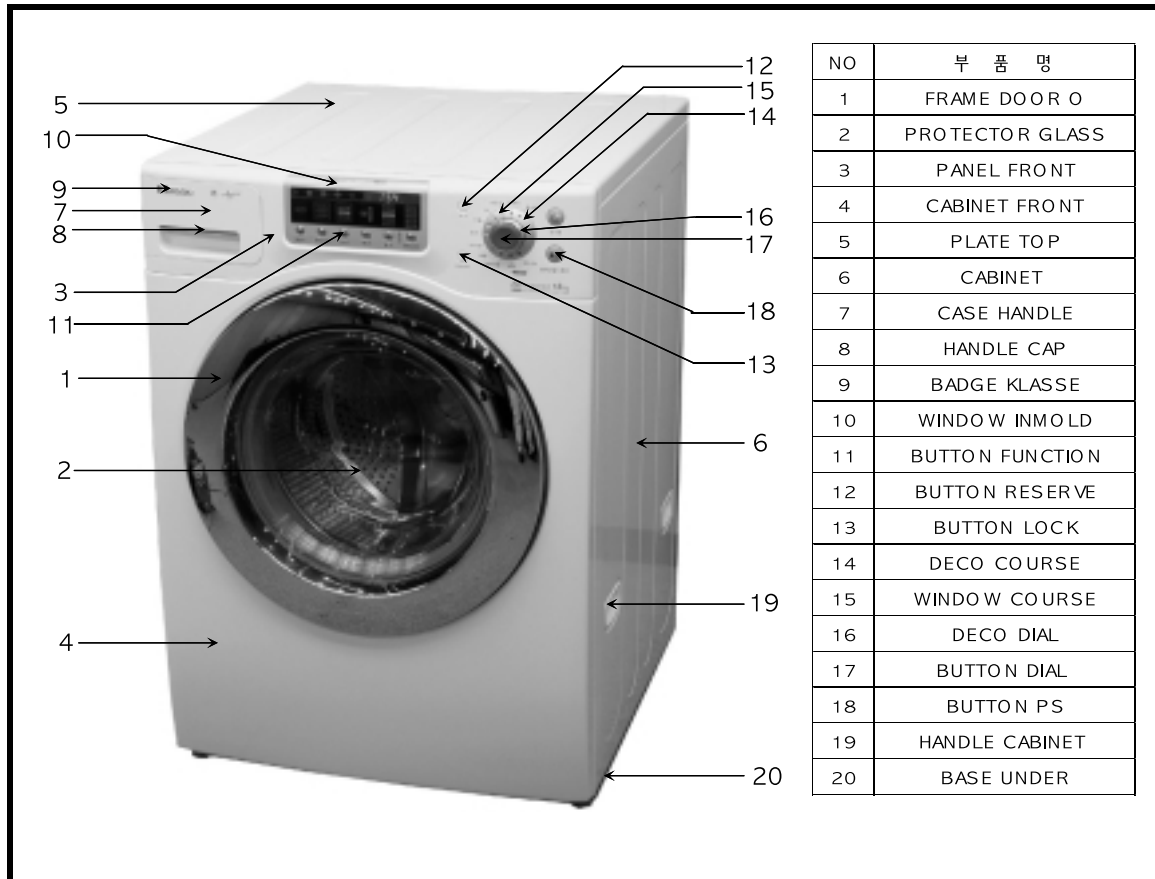
4. DRIVE SYSTEM





2. SPECIFICATION OF DRUM WASHING MACHINE

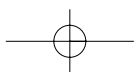
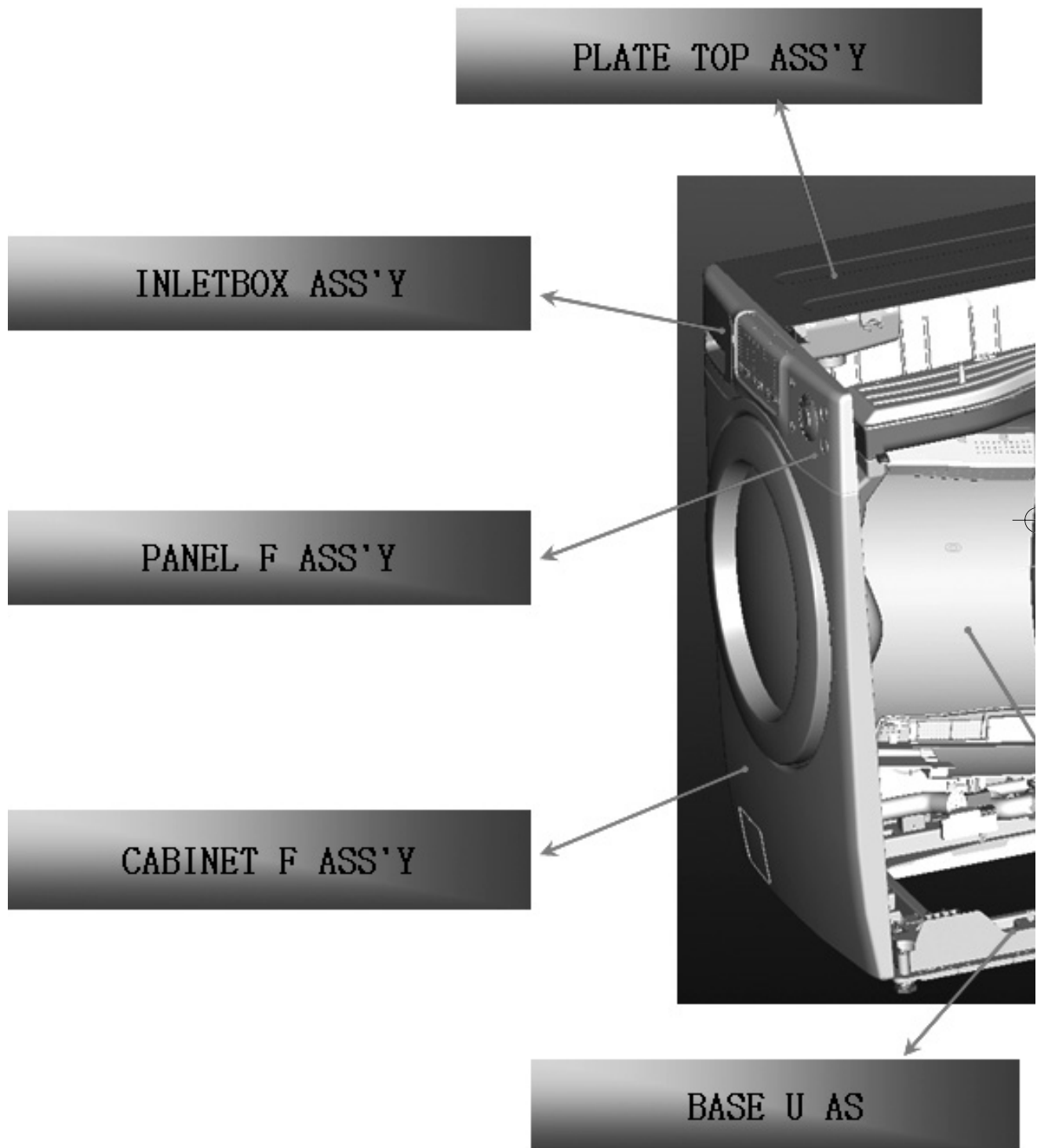
1. PANEL TYPE 1



DIMENSION(WxDxH)		686mm(W) x 807mm(D) x 1020mm(H)
MACHINE WEIGHT		96 kg
POWER SOURCE		120V / 60Hz
POWER	WASHING	10 A
CONSUMPTION	DRY	11.5 A
WASHING TYPE		DRUM TYPE
DRY TYPE		Digital condensing dry system
OPERATION WATER PRESSURE		29kPa ~ 784kPa(0.3kgf/cm ² ~8kgf/cm ²)



3. VERIFICATION OF DRUM ASSY



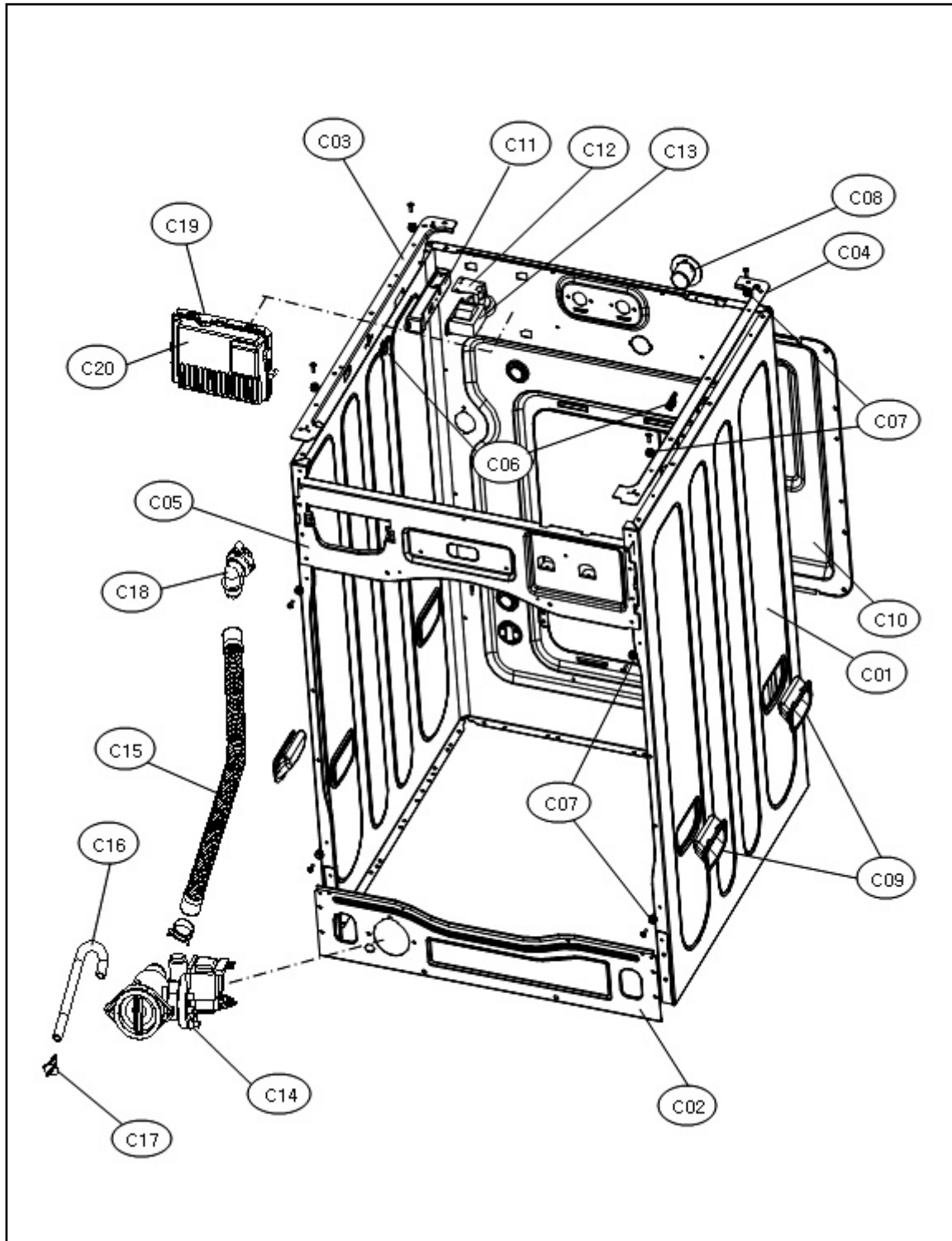
CABINET AS

DUCT B AS A + DUCT PIPE

TUB AS

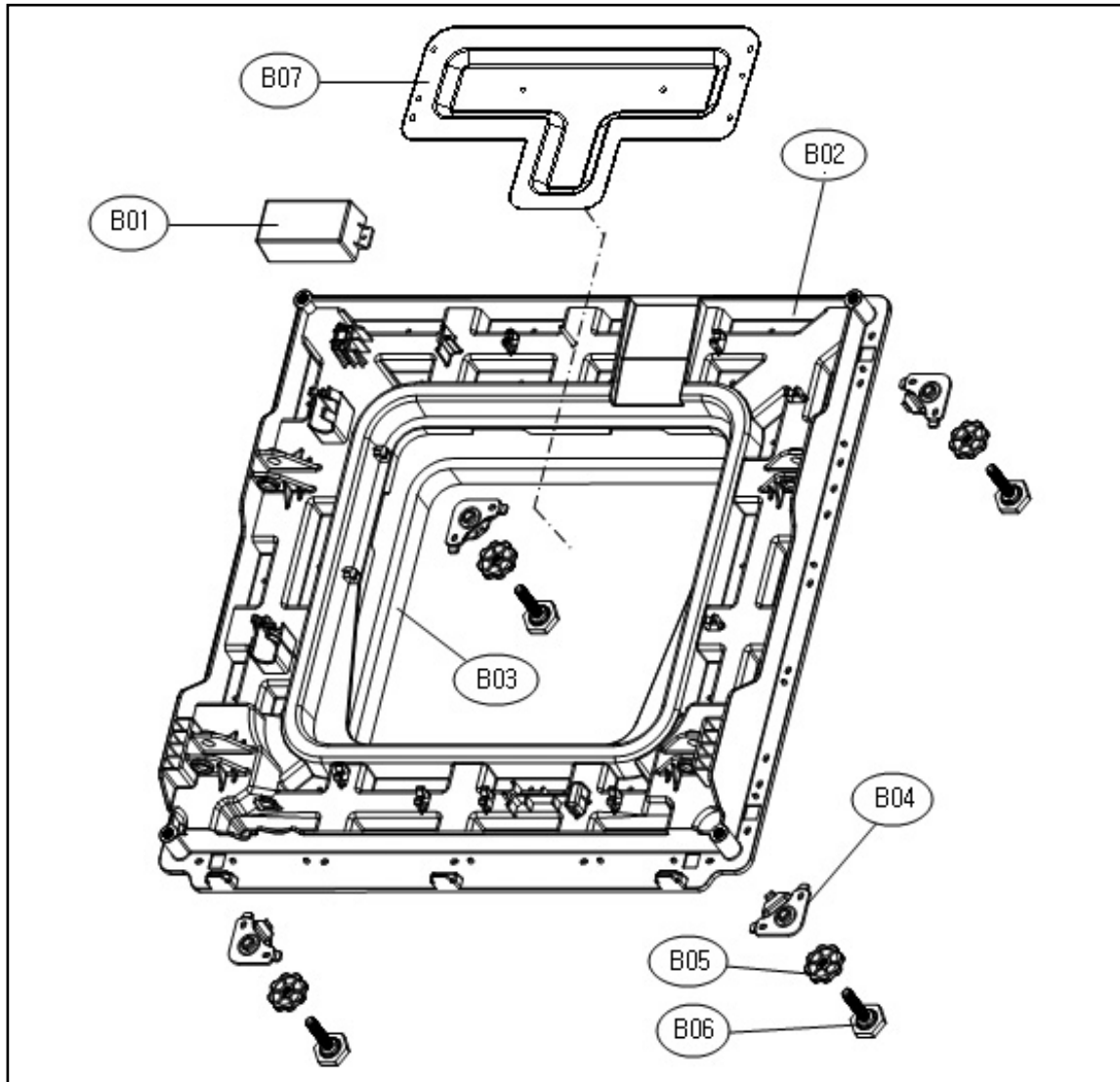
4. PARTS LIST FOR EACH ASSY

1. THE EXPLODED VIEW OF CABINET ASSEMBLY



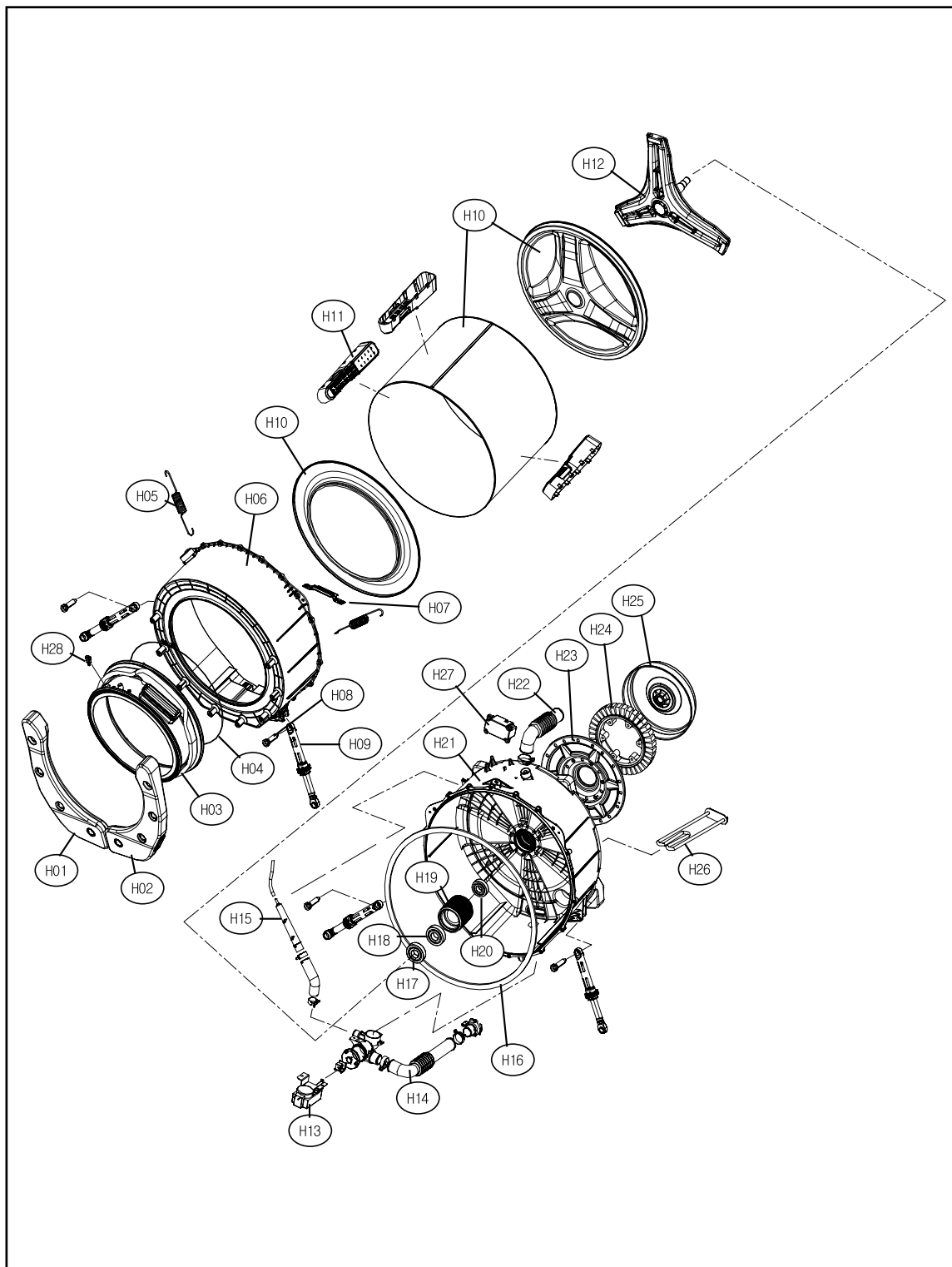
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
C01	CABINET	3610811730	SGCC 0.8T, PUMP COMBO	1	
C02	FRAME LOWER	3612206700	SBHG 1.2T	1	
C03	FRAME TOP L	3612206500	SGCC 1.6T	1	
C04	FRAME TOP R	3612206600	SGCC 1.6T	1	
C05	FRAME UPPER	3612206400	SBHG 1.2T	1	
C06	STOPPER SPRING	3615202200	POM	2	
C07	FIXTURE PLATE	3612008000	POM	8	
	SCREW TAPPING	7121401211	T2S PAN 4X12 MFZN	8	
C08	NOZZLE AIR	3618103110	PP	1	
C09	HANDLE CABINET	3612608100	PP	2	
C10	COVER BACK AS	3611425510	COVER B + PAD CABINET	1	
C11					
C12	SENSOR PRESSURE	3614825220	DWD - 130RP	1	
C13	REACTOR	52G043A110	UL L=150MM	1	BASE U
C14	UNIT DRAIN PUMP AS	36189L5600	PUMP+FILTER	1	
C15	HOSE DRAIN I AS	3613271200	PUMP HOSE	1	
C16	HOSE WATER REMAIN	3613271400	EPDM	1	
C17	CAP WATER REMAIN	3610916800	PP	1	
C18	GUIDE DRAIN HOSE	3612510400	PP	1	
C19	PCB AS	3610PCB490	MEX COMBI	1	COMBO
		3610PCB495	MEX WASHER	1	WASHER
C20	COVER PCB M	3611427700	UL,ABS VE - 0856, MAIN PCB	1	

2. THE EXPLODED VIEW OF BASE U ASSEMBLY



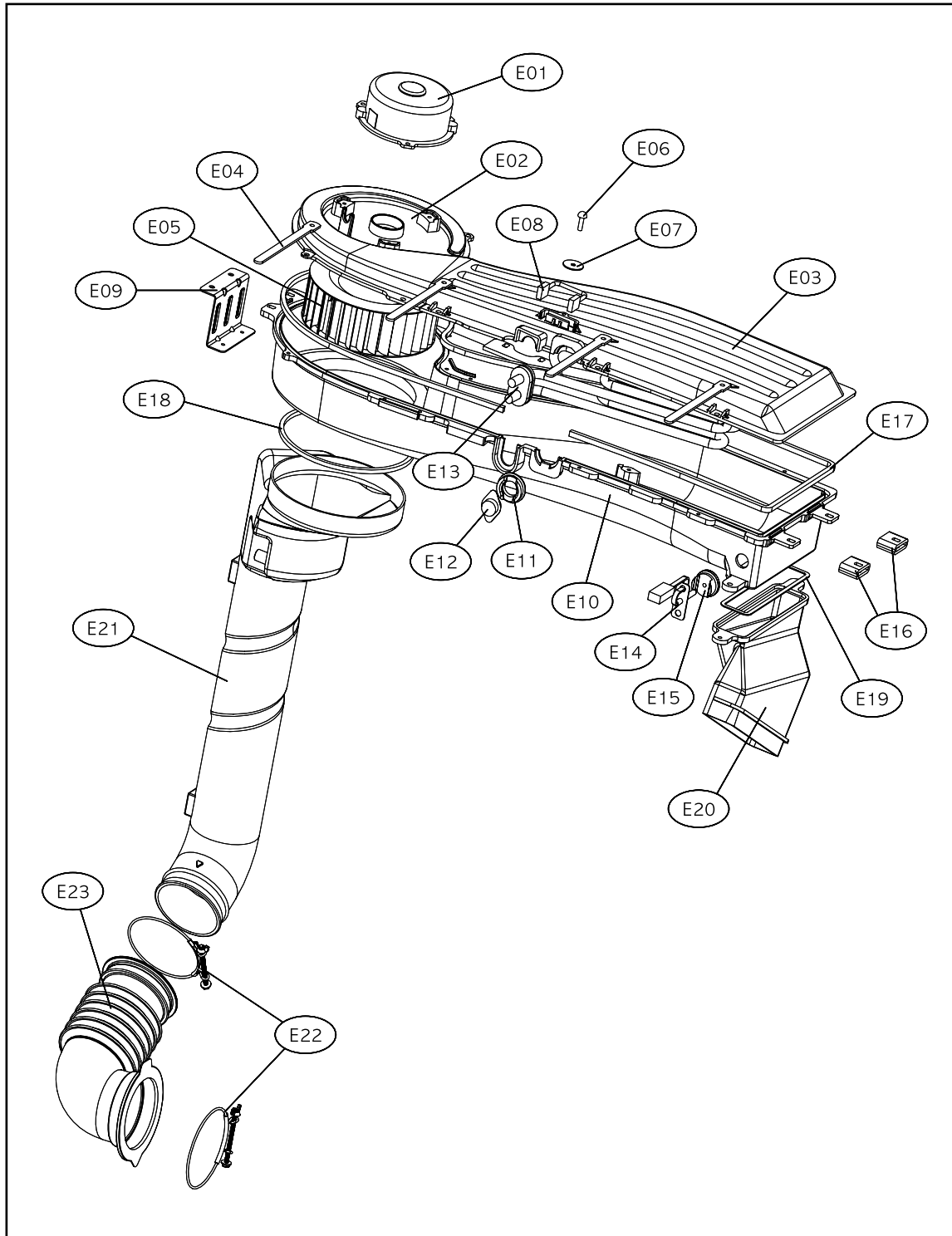
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
B01	EMI FILTER	3611908700	DWLF - K23	1	
B02	BASE U	3610392700	PP	1	
B03	ABSORBER BASE	3610115400	PEM, 12X1500, 25T	1	
B04	SUPPORTER LEG	3615303600	3.0T	4	
B05	FIXTURE LEG	3612006400	ABS, DWD - 100DR	4	
B06	FOOT	3612100600	BUTYL, DWD - 100DR	4	
	SPECIAL BOLT	3616029000	10 X 1.25, 51MM	4	
B07	PROTECTOR HEATER	3618304600	SECC 0.35T	1	

3. THE EXPLODED VIEW OF TUB ASSEMBLY



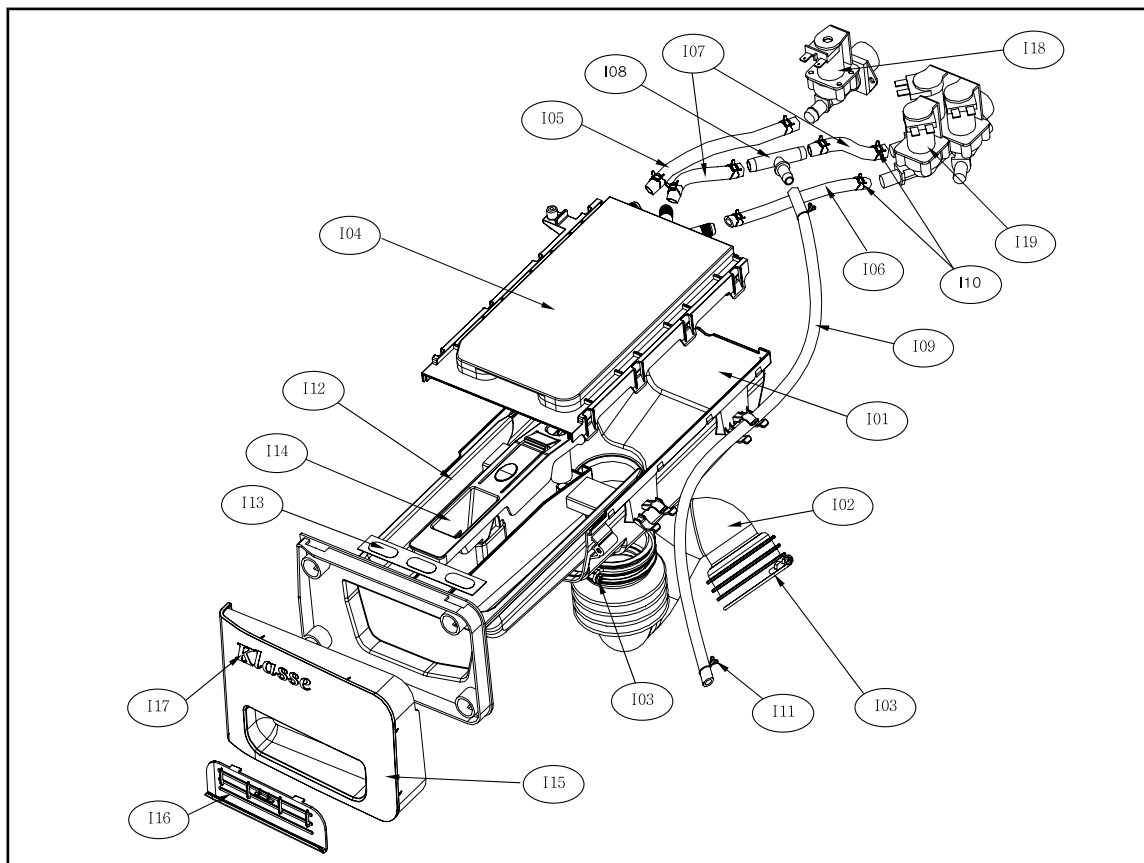
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
H01	BALANCER WEIGHT AS(L)	3616106900	13KG DRUM	1	
H02	BALANCER WEIGHT AS(R)	3616106800	13KG DRUM	1	
H03	GASKET	3612321900	EPDM	1	COMBO
		3612322000	EPDM	1	WASHER
H04	CLAMP GASKET AS	3611205300	WIRE	1	
H05	SPRING SUSPENSION	3615114800	13KG DRUM	2	
H06	TUB FRONT	3618828Y00	FRPP	1	
H07	FIXTURE HEATER	3612006700	SUS	1	
H08	DAMPER PIN	361A700200	AKS D=14.5	4	
H09	DAMPER FRICTION	361A700110	70N AKS ST=170 - 260 DL=197.5	4	
H10	DRUM AS	3617008X00	SUS	1	
H11	LIFT AS	361A400510	NON - NANO, SUS FILTER	3	
H12	SPIDER AS	361A300600	ALDC+S45C	1	
H13	-	-	-	-	
H14	HOSE DRAIN	3613269000	EPDM,PUMP	1	
H15	AIR TRAP AS	3610AAR600	HOSE+TRAP	1	
H16	GASKET TUB	3612321100	EPDR FORM	1	
H17	WATER SEAL	361A600200	NBR	1	
H18	BEARING INNER	3616303800	6306DD	1	
H19	BEARING HOUSING	3616303700	ALDC	1	
H20	BEARING OUTER	3616303900	6305DD	1	
H21	HOSE AIR	3613266300	EPDM	1	
H22	BASE	3610392600	SESEN	1	
H22	UNIT STATOR BL C	36189L4810	¥Ö265X30H,36SLOT,2SNESOR,WS2A30G001	1	
H24	UNIT ROTOR BLDC	36189L4900	MAGNET24,SERRATION,WR1238F001	1	
H26	HEATER WASH	3612801740	120V 1KW.1R0A721005.RW8TF1PE.IRCA	1	
H27	UNIT BUBBLE PUMP	36189L4130	100-130 DBK-115DC RP-CUSH COM.	1	

4. THE EXPLODED VIEW OF DUCT B AS AND DUCT PIPE ASSEMBLY



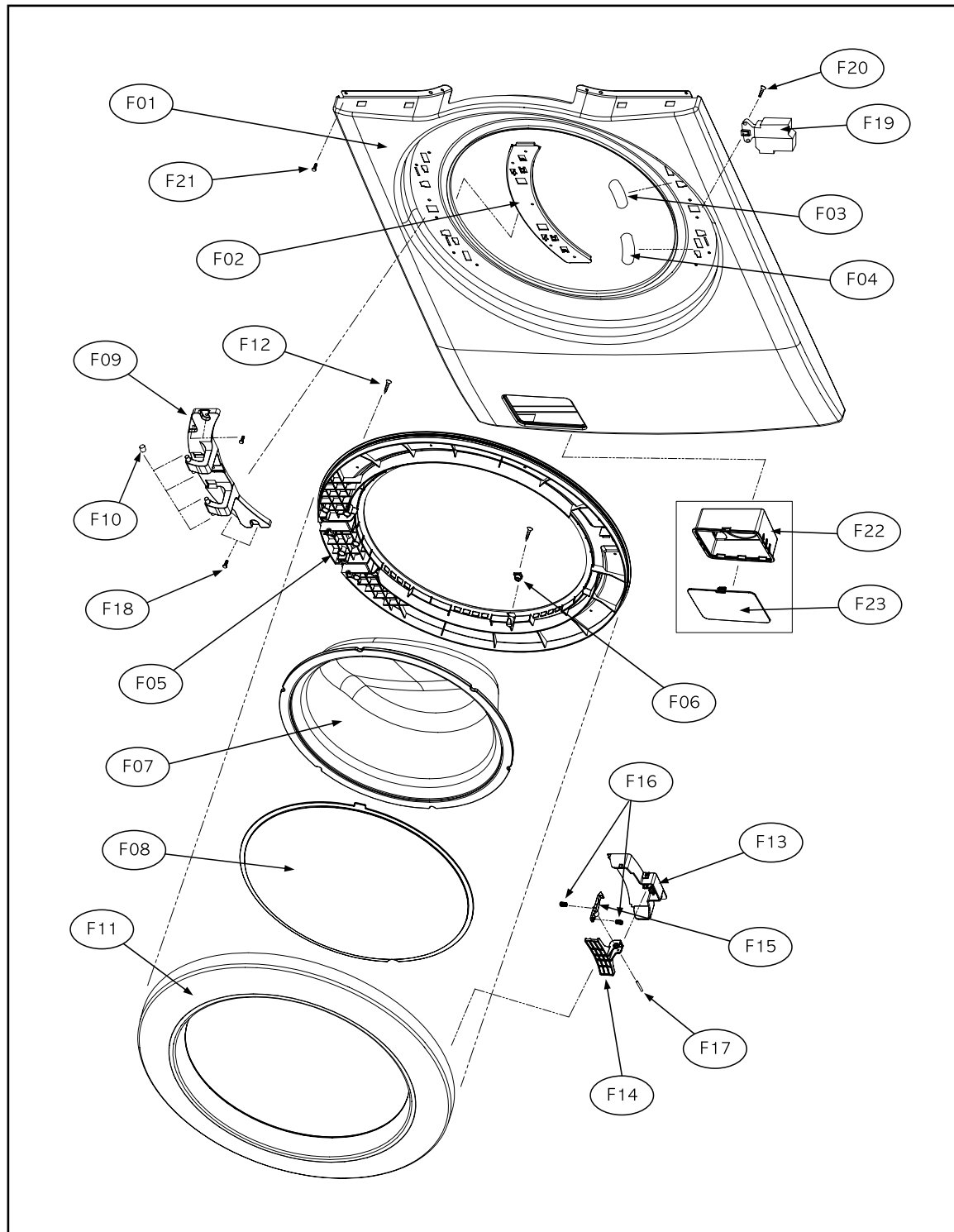
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
E01	UNIT FAN MOTOR	36189L3Z10	ISM - 77806DWWA 24V CW 8P 14W	1	
E02	DUCT COVER	361A200400	AL, 2.5T	1	
E03	DUCT B UPPER AS	361A200670	ALCOSTA UPPER, NON - COATING	1	
E04	CLAMP CORD	3611203330	DABE - 2 A=9 B=5.3 L=105	4	
E05	FAN AS	3611885900	D133 FAN, GFPP30% < - NYLON66	1	
E06	SCREW TAPPING	7122400811	T2S TRS 4x8 MFZN	1	
E07	WASHER PLAIN	7400432011	PW 4.3*20*1T	1	
E08	FUSE TEMPERATURE	361A800130	128 ,DF - 128S,15A,250V,VDE	1	
E09	FRAME HEATER FRANGE	3612206200	SBHG	1	
E10	DUCT B LOWER	361A200101	AL, 3T	1	
E11	PACKING THERMOSTAT	3614009900	SILICON	1	
E12	SWITCH THERMOSTAT	3619046500	UL,150ON - 120OFF,125V/15A,250V/10A	1	
E13	HEATER DRY	3612802100	120V/1.3KW_120HM3.5W/SQ.INCOLOY800.RA8.1R3A034008	1	
E14	THERMISTOR DRY	361AAAAC00	UL APPROVED.R40=26.065K.R90=4.4278K	1	
E15	PACKING RUBBER	3614009800	SILICON	1	
E16	CUSHION DRY	3611562800	NBR	2	
E17	GASKET SEAL B	3612320810	EPDM FOAM, L=412, 4.9*4.4*4.8	1	
E18	GASKET SEAL A	3612320820	5,L=1385	1	
E19	GASKET INLET	3612320900	DWD - 100DR	1	
E20	DUCT GUIDE	361A201700	ALDC	1	
E21	DUCT PIPE AS	361A201400	13KG	1	
E22	CLAMP AS(DUCT)	3611203700	DUCT	1	
E23	BELLOWS DUCT	3616403000	EPDM	1	

5. THE EXPLODED VIEW OF INLET BOX ASSEMBLY



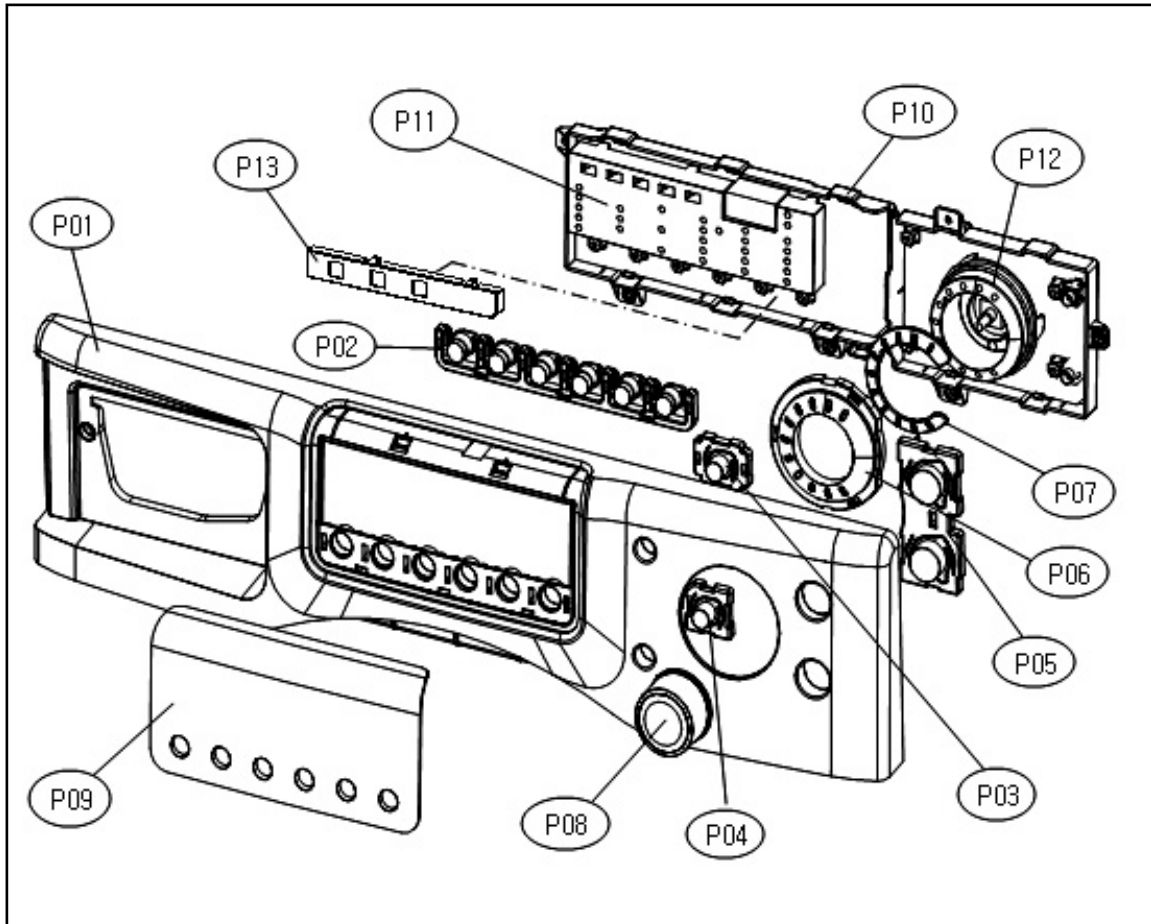
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
I01	INLET BOX	3617505800	ABS	1	
I02	HOSE INLET	3613270300	EPDM	1	
I03	CLAMP AS	3611203200	ID=60, WIRE+GUIDE+BOLT+NUT	2	
I04	NOZZLE AS	3618103500	PP	1	
I05	HOSE HOT	3613270400	EPDM, ID=10, OD=16, L=460mm	1	
I06	HOSE MAIN	3613270500	EPDM, ID=10, OD=16, L=410mm	1	
I07	HOSE C	3613267020	EPDM, ID=10, OD=16, L=230mm	2	
I08	PIPE JOINT(HOSE INLET)	3614413300	PP	1	
I09	HOSE SHOWER	3613270110	EPDM, L=590mm	1	
I10	CLAMP SPRING	3611203800	ID=15.5, T=0.6, B=10	8	
I11	CLAMP	4507D08152	HOSE ID=7	2	
I12	CASE DETERGENT	3611141800	ABS	1	
I13					
I14	CAP SOFTENER	3610917200	PP	1	
I15	CASE HANDLE	3611141700	ABS	1	
I16	HANDLE CAP	3612609100	ABS	1	
I17					
I18	VALVE INLET	3615415700	UL.120V60HZ.BITRON.1WAY	1	
I19	VALVE INLET	3615415070	100~130V,3WAY,RINSE GUIDEÀ,PP/BACKET	1	1

6. THE EXPLODED VIEW OF CABINET F ASSEMBLY



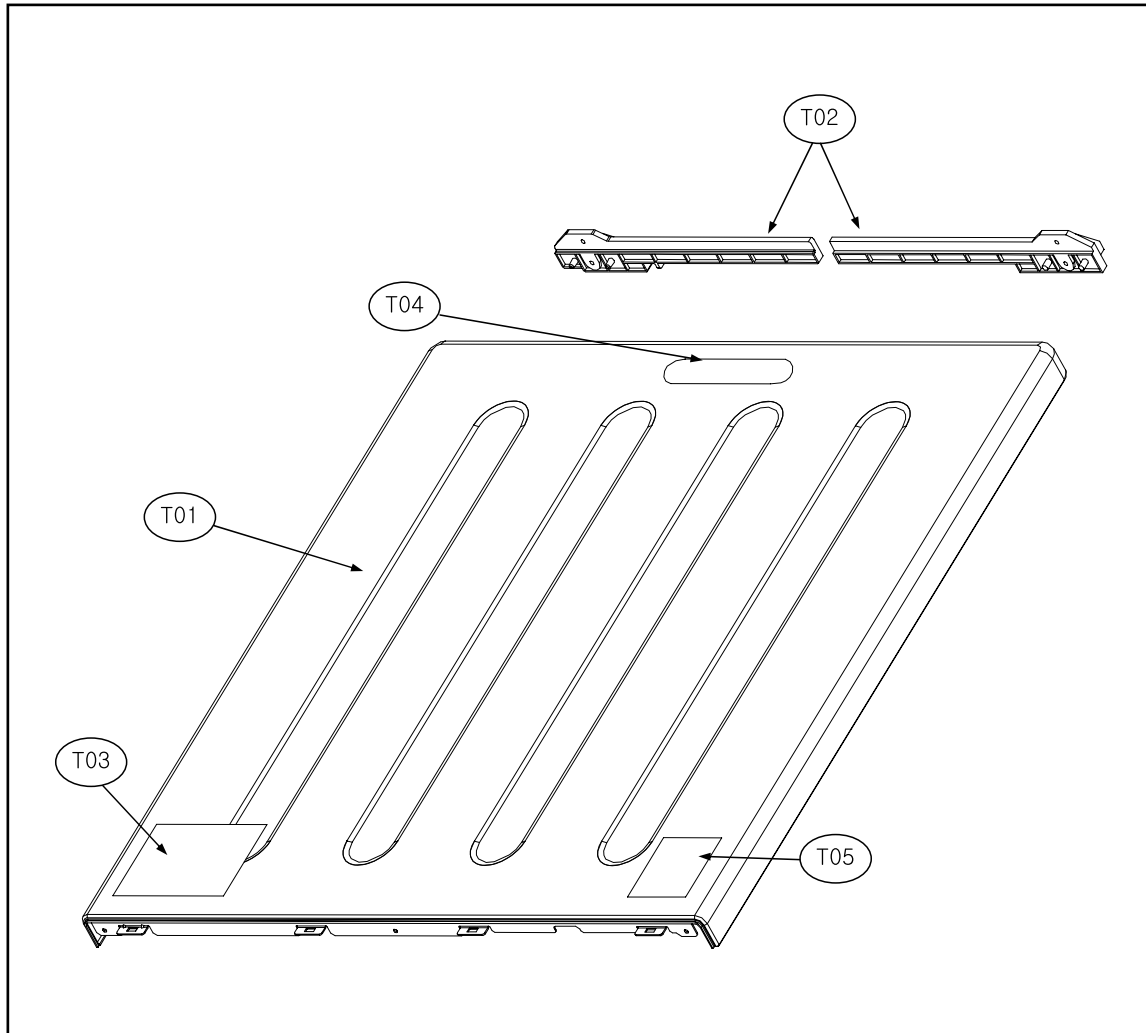
No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
F01	CABINET F	3610811820	SECD 1.0T PUMP	1	
F02	SUPPORT HINGE	3615304000	SGCC 1.6T	1	
F03	LABEL SAFETY R	3613555800	PVC	1	
F04	LABEL DRY R	3613555900	PVC	1	
-	DOOR AS	361A110800	130RP'S DOOR AS	1	
F05	FRAME DOOR IN	3612206800	TB53	1	
F06	STOPPER DOOR	3615202300	PP	1	
F07	DOOR GLASS	361A110600	GLASS	1	
F08	PROTECTOR GLASS	3618304300	PC	1	
F09	HINGE DOOR	3612902900	ALDC	1	
F10	CAP HINGE DOOR	3610916500	POM	4	
F11	FRAME DOOR OUT	3612206900	CR BASE, 732G	1	
F12	SCREW TAPPING	7115402008	T1S FLT 4x20 SUS430	16	
F13	COVER HANDLE	3611426700	ABS	1	
F14	HANDLE DOOR	3612609000	ABS	1	
F15	HOOK DOOR	3613100800	ZNDC	1	
F16	SPRING HOOK	3615113700	SUS ID=4.3, NI=7, D=Ø0.9	2	
F17	PIN HANDLE	3618200100	SUS D=3.0	1	
F18	SCREW TAPPING	3616030000	F/L BOLT(SE) 5*12 SUS	4	
F19	SWITCH DOOR LOCK	3619046410	DF F11 110 125V 16A PTC - SOLENOID	1	
F20	SCREW TAPPING	7122401608	T2S TRS 4X16 SUS 430	2	
F21	SCREW TAPPING	3616029950	TTS"S" HEX F/L 4*8	4	
F22	CASE PUMP	3611141400	PP	1	
F23	COVER PUMP	3611426800	ABS	1	

7. THE EXPLODED VIEW OF CABINET F ASSEMBLY



No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
P01	PANEL F	3614284800	ABS	1	
P02	BUTTON FUNCTION	3616604500	ABS	1	
P03	BUTTON RESERVE	3616604700	ABS	1	
P04	BUTTON LOCK	3616604300	ABS	1	
P05	BUTTON P - S	3616604600	ABS	1	
P06	DECO. COURSE	3611683000	ABS	1	
P07	WINDOW COURSE	3615503600	ABS	1	
P08	BUTTON DIAL AS	3616634700	130RPS BUTTON DIAL AS	1	
P09	WINDOW INMOLD AS	3615504000	130RPS WINDOW INMOLD	1	
P10	PCB FRONT AS	PRPSSWAD27	FRONT, WASHER, PAIR0 DRY	1	COMBO
		PRPSSWAD28	FRONT, WASHER, KUD-WD1117	1	WASH
P11	CUSTOM LED DISPLAY	4500D72092	UL ENGLISH C - 130 CPMBO	1	
P12	HOLDER COURSE	3613050910	UL, ABS(VE - 0856)	1	
P13	COVER PCB F	3611427800	UL, ABS(VE - 0856), FRONT PCB	6	

8. THE EXPLODED VIEW OF PLATE T ASSEMBLY



No.	PARTS NAME	PARTS CODE	DESCRIPTION	UNITS	REMARK
T01	PLATE TOP	3614533010	SECD 1.2T	1	
T02	PLATE SUPPORTER AS	3615304110	ABS + EPDM	2	
-	SCREW TAPPING	7122401411	T2S TRS 4x14 MFZN	4	
T03	LABEL CAUTION	3613553831	ART	1	

5. SEQUENCE CHART OF PCB

1. SEQUENCE CHART

1-1. TYPE 1 (WASHING)

DIVISION		Proces Time	Normal		Cotton		White		EcoWhite	Memory
			Small	Middle	Small	Middle	Small	Middle		
Pre. Wash	Sensing	10sec								
	Water Supply	2min								
	Pre. Wash	10min								
		8min								
	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
Washing	Sensing	20sec								
	Water Supply	2min								
		50min					53min	57min		
	Washing1 (Heating)	45min							49min	
		30min	28min	32min						32min
		25min			16min	17min				
		15min								
Rinse	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 1	4min								
	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 2	4min								
	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 3	4min								
Spin	Drain	1min								
	Balancing Spin	2min								
		9min								
	Main Spin	7min								
		5min								
End	Cloths Release	60sec								
	END	10sec								
Remain Time Display			1:05	1:09	53	54	1:30	1:34	1:26	1:09
NOTE		1. Normal : W/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 2. Cotton : W/C + Washing + Soil Normal + Rinse 2 + Spin (Max Speed) 3. White : E.H/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 4. Eco - White : H/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 5. Memory : W/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed)								

DIVISION		Proces Time	Heavy	Delicate	Wool	Wash	Wash - D	Drum - C
Pre. Wash	Sensing	10sec						
	Water Supply	2min						
	Pre. Wash	10min						
		8min						
	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
Washing	Sensing	20sec						
	Water Supply	2min						
		50min						
	Washing1 (Heating)	45min	36min					
		30min						Soak 30min
		25min						
		15min		10min	8min	16min	13min	8min
Rinse	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
	Water Supply	2min						
	Rinse 1	4min						
	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
	Water Supply	2min						
	Rinse 2	4min						
Spin	Drain	1min						
	Balancing Spin	2min						
		3min						
	Main Spin	2min						
Dry	Crease Care	1min						
	Dry						50min	30min
	Cooling	5min						
	Crease Care	30min						
End	Cloths Release	60sec						
	END	10sec						
Remain Time Display			1:13	46	32	53	1:46	1:51
NOTE								

1-2. TYPE 2 (WASHING + DRY)

DIVISION		Proces Time	Normal		Cotton		White		EcoWhite	Memory
			Small	Middle	Small	Middle	Small	Middle		
Washing	Sensing	20sec								
	Water Supply	2min								
	Washing1 (Heating)	50min					53min	57min		
		45min							49min	
		30min	28min	32min						32min
		25min			16min	17min				
		15min								
Rinse	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 1	4min								
	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 2	4min								
	Drain	1min								
	Balancing Spin	2min								
	Mid.Spin	3min								
	Water Supply	2min								
	Rinse 3	4min								
Spin	Drain	1min								
	Balancing Spin	2min								
	Main Spin	9min								
		7min								
		5min								
Dry	Drain	1min								
	Dry	160min								
		100min								
	Cooling	5min								
End	Cloths Release	60sec								
	END	10sec								
Cloths Release		30min								
Remain Time Display			2:51	3:55	2:39	3:40	3:16	4:20	4:12	3:55
NOTE		1. Normal : W/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 2. Cotton : W/C + Washing + Soil Normal + Rinse 2 + Spin (Max Speed) 3. White : E.H/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 4. Eco - White : H/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed) 5. Memory : W/C + Washing + Soil Normal + Rinse 2 + Spin (Middle Speed)								

DIVISION		Proces Time	Heavy	Delicate	Wool	Wash	Wash - D	Drum - C
Pre. Wash	Sensing	10sec						
	Water Supply	2min						
	Pre. Wash	10min						
		8min						
	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
Washing	Sensing	20sec						
	Water Supply	2min						
	Washing1 (Heating)	50min						
		45min	36min					
		30min						Soak 30min
		25min						
		15min		10min	8min	16min	13min	8min
Rinse	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
	Water Supply	2min						
	Rinse 1	4min						
	Drain	1min						
	Balancing Spin	2min						
	Mid.Spin	3min						
	Water Supply	2min						
	Rinse 2	4min						
Spin	Drain	1min						
	Balancing Spin	2min						
	Main Spin	3min						
		2min						
Dry	Crease Care	1min						
	Dry		160min				50min	30min
	Cooling	5min						
	Crease Care	30min						
End	Cloths Release	60sec						
	END	10sec						
Remain Time Display			3:59	46	32	53	1:46	1:51
NOTE			1. Heavy : W/W + Washing + Soil Heavy + Rinse 2 + Spin (Middle Speed) 2. Delicate : C/C + Washing + Soil Normal + Rinse 2 + Spin (Low Speed) 3. Wool : C/C + Washing + Soil Light + Rinse 1 + Spin (Middle Speed) 4. Wash : C/C + Washing + Soil Light + Rinse 2 + Spin (Middle Speed) W/C + Washing + Soil Light + Rinse 2 + Spin (Middle Speed) 5. Wash - Dry : C/C + Washing + Soil Light + Rinse 2 + Spin (Middle Speed) Cold - Wash : C/C + Washing + Soil Light + Rinse 2 + Spin (Middle Speed) 6. Drum - Cleaning : C/C + Washing + Soil Light + Rinse 2 + Spin (Low Speed) + Dry (Low)					



2. Main function of PCB program

2 - 1. LOAD SENSING

1) Deciding the water level

Normal, Cotton, Whites course will be followed by this process.

Check the water level with dry laundry at the starting wash.

Check the water level by using motor output data during 10 sec, 75 rpm.

2) Balancer Spin

Check after finishing washing step with wet laundry.

Checking by using motor output data during 10 sec, 75 rpm.

The decided data is different depending on loading condition.

2 - 2. BALANCE SPIN

1) Motor running during balance spin.

Spreading the laundry : Rotating the same 45 rpm with left and right direction alternatively.

Attaching stop : Attaching the laundry to drum inside with constant speed.

Unbalance checking point : First step, check the U.B at 95 rpm, 160 rpm.

Second step, check the U.B at 95 rpm, 350 rpm.

Third step, at 300 rpm. if the unbalance data is over the criterion,

This process will be repeated.

Drain step : Drain at water around 160 rpm.

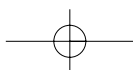
After drain, check the unbalance data again. This is so - called balance spin step.

2) Property of balance spin.

Conducting 10 times maximum.

If the washer can not pass balance spin step during 10 times, then water will be supplied.

If the washer can not pass 20 times of balance spin, UE error mode will be displayed on PCB.





2 - 3. DOOR S/W

1) The working principle of Door S/W

Door Locking

Bimetal on (3 sec) - - > solenoid (supply 20msec pulse 2 times)

Door Unlocking

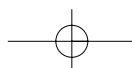
Bimetal off - - > solenoid (supply 20msec pulse, until unlock)

After door locking, all parts can work normally.

After pressing power button, if the temperature of wash thermistor is over 55 or the water level is over the safety level, the door will be locked.

The door the will be unlocked immediately after all processes are finished.

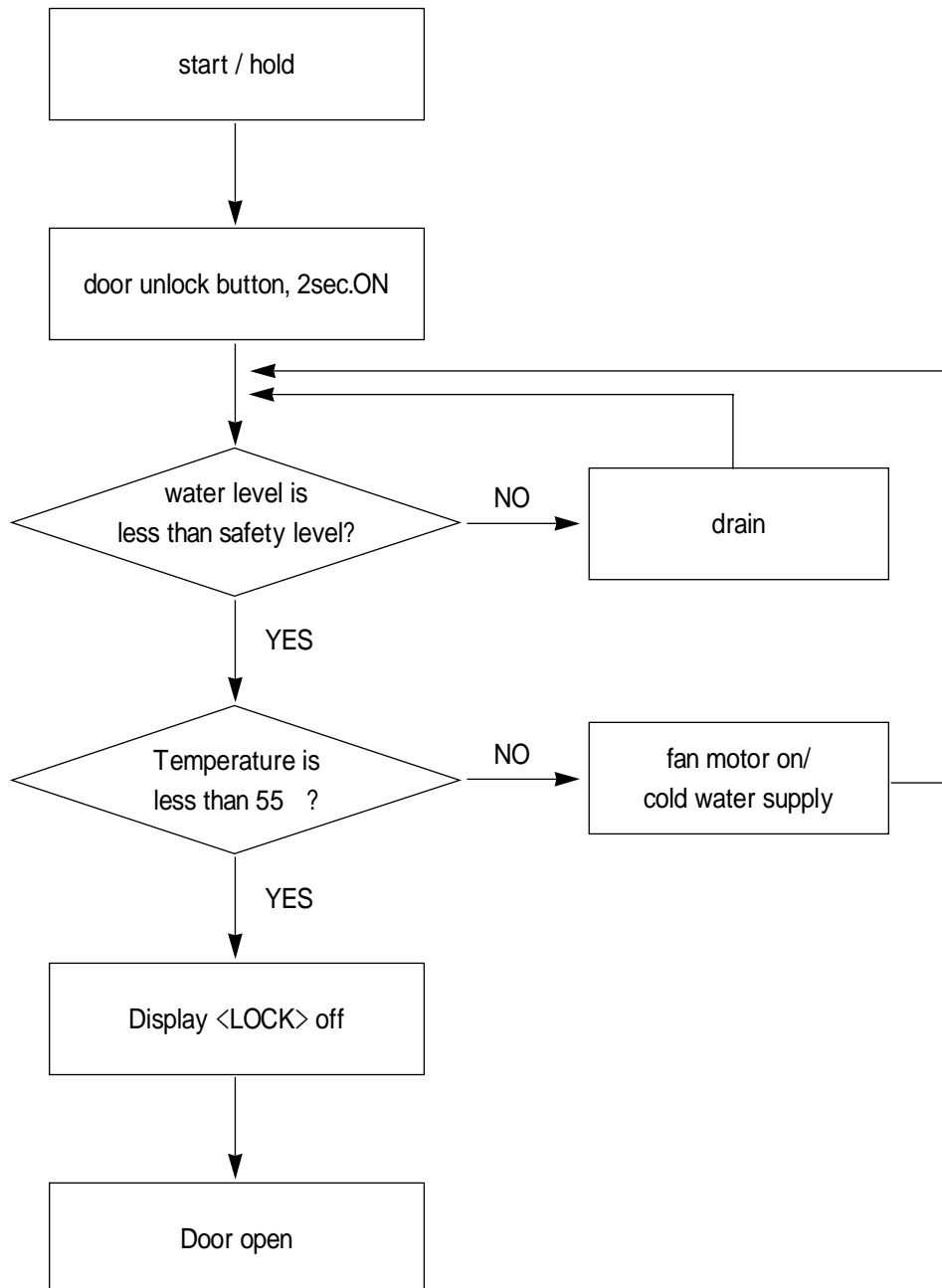
The door can be opened during processing if there is no problem to unlock.



2) DOOR OPEN SYSTEM

If add the laundry during washing, press the door unlock button.

Door open sequence at abnormal condition.





2 - 4. Child Lock

Press the " TEMP " and " DRY " button simultaneously during processing.

Under the Child Lock function, only power button is working.

During Child Lock function, CHL will be displayed on PCB.

In order to unlock Child Lock mode, press "TEMP" and "DRY" simultaneously.

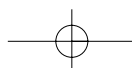
2 - 5. The sequence of drain

If the checking time to reset point is below 1 min, the remaining drain time is 30 sec.

If the checking time to reset point is over 1 min, the remaining drain time is 2 min.

If the checking time to reset point is over 10 min, OE signal will be appeared on PCB.

If the temperature is over 55 , the water will be supplied to high water level, then the drain will start.



3. Convenience service functions(test mode)

1. Testing Mode

PCB and other electronic parts will be tested without water supply whether they are normal or not.

- 1) Process : press power button - -> press "SPIN" button 3 times with pressing "WASH" button - -> 'L d' will be shown on LED - -> Whenever pressing "TEMP" button 1 time, below process will be occurred.

L C (Lock Closed) - -> F (Fan Motor) - - -> H (Hot V/V) - -> C (Cold V/V) ->
P (prewashing V/V) -> d (dry V/V) -> bb (bubble) -> dr (drain motor) ->
L O(Lock S/W Open)

2) More details

When turn on 'LOCK' singal, all process is conducting normaly.

When working starts, the PCB displays all the sensor conditions.

In this case, BLDC Motor is not tested. In order to test it, select spin or rinse.

2. Continous testing mode

- 1) Process : after pressing "WASH", "RINSE", "SPIN" button simultaneously, press "POWER" button.

ALL LED On/Off 1 time - -> L C (Lock Closed) - - -> R (Motor right) - -> L (Motor Left) - -> F (Fan Motor) - - -> H (Hot V/V) - -> C (Cold V/V) - -> b (pre - wash V/V) - -> d (dry V/V) - -> bb (bubble) - -> h1 (HEATER WASH) - -> h2(HEATER DRY) - -> dr (DRAIN MOTOR On) - ->L O(Lock S/W Open)

2) More tails

LED test can be done with all LED On.

All sensor conditions will be shown on PCB during processing.

4. ERROR DISPLAY

ERROR SINGAL	ERROR	CAUSE	COUNTERPLAN
IE	WATER INLET ERROR	inlet valve broken	Change the Inlet - Valve
		drain motor working during water supply	Change the Drain Motor
		pressure switch disorder	Change the Sensor Pressure
		PCB can not check water level	Change the PCB
OE	DRAIN ERROR	drain motor out of order	Change the Drain Motor
		inlet valve working during drain	Change the Inlet - Valve
		pressure switch disorder	Change the Sensor Pressure
		PCB can not check water level	Change the PCB
UE	UNBALANCE ERROR	laundry unbalance	rearrange the laundry
LE	DOOR OPEN ERROR	door opened during processing	Close the Door
		LOCK S/W broken	Change the LOCK SW
		PCB can not check door lock	Change the PCB
E2	Overflow	continuous water supply	Change the Inlet - Valve
		drain motor can not work	Change the Drain Motor
		pressure switch disorder	Change the Sensor Pressure
E3	FAN MOTOR disorder	fan motor cannot work	Change the Fan - Motor
		PCB cannot control fan motor	The contact of the Connector or Change the PCB
E4	LEAKAGE ERROR	Water leaks from the tub or the drain hose.	Check the leak of the tub or the drain hose Then change the tub or drain hose.
E5	HIGH VOLTAGE ERROR	huge noise	re - installation
		spining with jamming clothes between gasket	rearrange the laundry
		PCB broken	Change the PCB
E6	EMG ERROR	huge noise	re - installation
		spining with jamming clothes between gasket	rearrange the laundry
		motor broken	Change the Motor
		PCB broken	Change the PCB
E7	Direction Error	move opposite direction	
		motor Hall IC broken	check the connector and change
E8	motor disorder	connector problem	The contact of the Connector
		abnormal loading condition	check the loading condition and change
E9	SENSOR PRESSURE ERROR	abnormal water level	Change the Sensor Pressure
H1	sensor temp. dry disorder	sensor temp broken	Change the Sensor Temp.
		connector problem	The contact of the Connector
H2	sensor temp. wash disorder	sensor temp. of washing broken	Change the Sensor Temp.
		connector problem	The contact of the Connector
H3	overheating dry heater	fan motor cannot spin	Change the Fan Motor
		sensor temp. of dry broken	Change the Sensor Temp.
H4	overheating wash heater	heater working with no water supply	check water level
		sensor temp. of wash broken	Change the Sensor Temp.
H6	abnormal of washing heater	washing heater cannot work	Change the Heater Wash
H7	abnormal of drying heater	dry heater cannot work	Change the Heater Dry
H8	abnormal of sensor temp. of washing	heater working with no water supply	check the water level and washing heater

6. SPECIFICATION OF ELECTRIC PART

NO	PART NAME	Rating (V/Hz)	Model		PART CODE	BOM DESCRIPTION	TYPE
			WASH+DRY	WASH			
1	VALVE INLET (1 - Way)	120/60			3615416700	UL 120V 60Hz BITRON 1WAY	329
2	VALVE INLET (2 - Way)	120/60	-		3615416800	UL 120V 60Hz BITRON 2WAY	349
3	VALVE INLET (3 - Way)	120/60		-	3615416900	UL 120V 60Hz BITRON 3WAY	369
4	SENSOR PRESSURE	5V			3614825200	5V DRUM, DL - DW01	DL - DW01
						5V DRUM, DN - DD01	DN - DD01
5	CORD POWER AS	USA: 120/60			3611340430	UL SJT 16AWG 3C 125V 13A	LP - 31
6	HARNESS AS	WD1112		-	3612796R00	UL 13KG DRY PUMP	-
		WD1112	-		3612796S00	UL 13KG WASH PUMP	-
7	FUSE TEMPERATURE	15A 250V		-	361A800140	128 DF 128s 15A 250V	DF128s
8	SWITCH DOOR LOCK	100 - 130/50 - 60			3619046410	DF 125V 16A PTC - SOLENOID	DF
9	HEATER WASH	120/50 - 60			3612801740	120V 1.0kW 6.7W/SQ	RW8TF
10	HEATER DRY	120/50 - 60		-	3612802200	120V 1.3kW 3.5W/SQ	RA8
11	SWITCH THERMOSTAT	100 - 250V			3619047400	UL 150/ ON - 120/OFF 125V/15A	PW - 3N
12	UNIT STATOR BLDC UNIT ROTOR BLDC	A11			36189L4840 36189L4890	AL 265X30H 36SLOT 2 SENSOR MAGNET24, SERRATION, WR1238F001	
13	THERMISTOR WASH	A11			361AAAAB20	UL R25=11, 981kΩ, R80=1, 704kΩ	K276/12K/A24
14	THERMISTOR DRY	Dry		-	361AAAA20	UL R40=26, 065kΩ, R90=4, 4278kΩ	PT - 51F
15	UNIT FAN MOTOR	Dry		-	36189L3Z10	ISM - 77806DWWA 24V CW 8P 14W	ISM - 77806DWWA
16	DRAIN PUMP	120/60			36196TAP00	UL EMERSON PLASET 80W 20L 1.4A	65468

1. VALVE INLET

1) CLASS

DIVISION	PARTS NAME	BODY		USE	COIL resistance	FLUX				
		COLOR	SPEC			0.2kgfcm ²	1.0kgfcm ²	3.0kgfcm ²	5.0kgfcm ²	8.0kgfcm ²
3 - WAY VALVE	3615416900	IVORY	PP	PRE - WASH VALVE	880~1080	2~5	7~12	8~13	8~13	8~13
				MAIN WASH VALVE	880~1080	2~5	7~12	8~13	8~13	8~13
				DRY VALVE	880~1080	0.2~1.2				
2 - WAY VALVE	3615416800	BLUE	PP	PRE - WASH VALVE	880~1080	2~5	7~12	8~13	8~13	8~13
				MAIN WASH VALVE	880~1080	2~5	7~12	8~13	8~13	8~13
1 - WAY	3515416700	ORANGE	PP	MAIN WASH VALVE	888~1080	2~5	7~12	8~13	8~13	8~13

2) TROUBLE SHOOTING

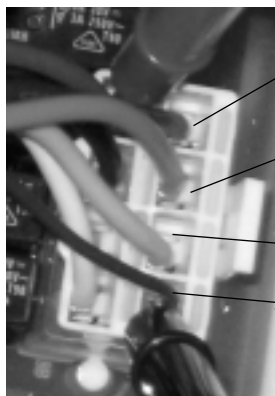
TROUBLE	SITUATION	CAUSE	CHECK POINT	SOLUTION	PCB ERROR MODE
WATER IS SUPPLIED	NO WATER SUPPLY WITH "WING" SOUND	closed water tap	check the water tap opened	Open the water tap	"IE"
		coil short	check the resistance 880~1080		"IE"
		alien material jammed	check the filter	Clean the filter	"IE"
		alien material inside inlet valve	-	Change the Inlet - Valve	"IE"
	NO WATER SUPPLY WITH SILENCE	unfixing connector	check the connector	The contact of the Connector	"IE"
		coil short	check the resistance 880~1080	Change the Inlet - Valve	"IE"
		harness short	check the connector		"IE"
WATER SUPPLY IS NOT STOPPED	THE WATER SUPPLY START WHEN POWER "ON"	pressure s/w broken	check the pressure switch	Change the Sensor Pressure	"E2"
		pressure hose broken	check the hose torn or twisted	Change the bad parts	"E2"
	THE WATER SUPPLY START WHEN POWER "OFF"	inlet valve broken	-	Change the Inlet - Valve	-
Etc	water leakage to the side	inlet valve poorly assembled	check the leakage of inlet valve	Change the Inlet - Valve	-

Checking method of coil resistance, harness, connector.



MAIN PCB

"8P" WHITE CONNECTOR



WASH VALVE(GREEN) :
COMMON(BLUE)/RESISTANCE TEST

PRE - WASH VALVE(RED) :
COMMON(BLUE)/RESISTANCE TEST

DRY VALVE(YELLOW) :
COMMON(BLUE)/RESISTANCE TEST

COMMON(BLUE)

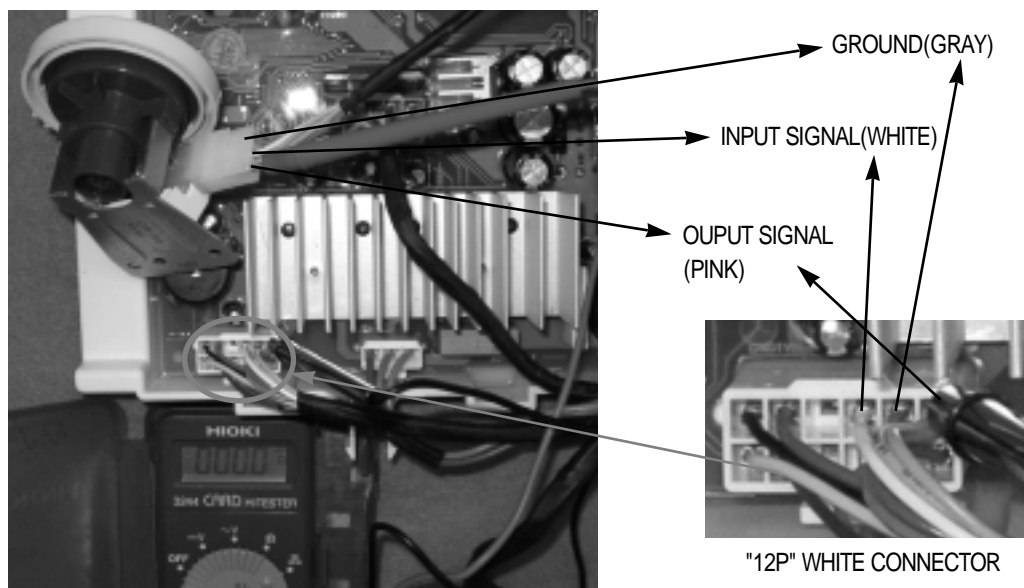


* "IE" ERROR : lack of water supply

2. PRESSURE SWITCH

TROUBLE	SITUATION	CAUSE	CHECK POINT	SOLUTION	PCB ERROR MODE
continuously water supply	inlet valve is normal, but continuous water supply	bellows problem	frequency Check : refer to below	change the pressure switch	"E2"
		hose problem	frequency Check : refer to below	change the hose	"E2"
			check the fine hole	change the hose	"E2"
		clogged hose	check the hose condition	remove the alien	"E2"
"E9" ERROR	water level frequency below 15kHz or over 30kHz	connector slipped out	check the connector condition	reconnecting	"E9"
		pressure switch broken	frequency Check : refer to below	change the pressure switch	"E9"
		connector short	connector broken		"E9"

Checking method of coil resistance, harness, connector.



* E2 : overflow error ;Water level is higher than overflow level because of continuous water supply.

E9 : Pressure switch trouble, the frequency is less than 15kHz or more than 30kHz in the processing.

3. DOOR LOCK SWITCH

1) CLASS

Failure Status	Details	Cause	Diagnosis of Failure	Solution	PCB ERROR MODE
Tick Sound	Tick Sound happens	Normal Sound	When Door is locked/unlocked, this Solenoid Working sound is heard.		-
"LE" Error	"LE" with tick sound	Connector slipped out	check the joining status of connector by eye	Assemble Connector	"LE"
		DOOR closed loosely	-	Close Door securely	"LE"
		Failure of DOOR HOOK	-	Replace DOOR AS	"LE"
		CATCH CAM broken	Tick sound happen	Replace DOOR S/W	"LE"
	"LE" without tick sound	Connector slipped out	check the joining status of connector by eye	Assemble Connector	"LE"
		Terminal slipped out	Refer to below checking method.	Insert Receptacle no.2 or no.3	"LE"
		Solenoid Coil Disconnection	Refer to below checking method.	Replace DOOR S/W	"LE"
DOOR not open	Power Failure/Forced Power Off during operation	During operation, "Power Failure" or "Forced Power S/W OFF" causes door not to be opened until maximum 5 minutes pass.			
	Power on state	Water remained in tub	Check whether the water level is over safety level.	After draining water, open the door	-
		hot temp. in tub	Prevent the burn due to hot temp. after dry.		
	ETC	Follow below process			

Checking Method of wiring/coil disconnection, connector slipping out on PCB board : Operate with the Door lock switch connected

1. Replacing method of DOOR LOCK SWITCH

- 1) Open DOOR, disassemble CLAMP SPRING for fixing gasket
- 2) Disassemble GASKET



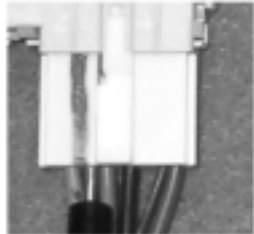
- 3) Disassemble two screws 5 for DOOR LOCK S/W



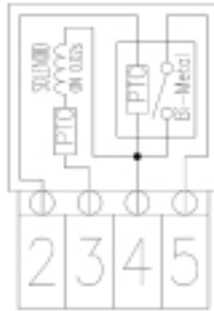
- 4) Disassemble DOOR LOCK S/W
- 5) Assemble in the reverse order



2. Checking method of DOOR LOCK SWITCH

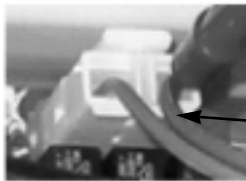


PIN 2 3 4 5
array (No no.1)

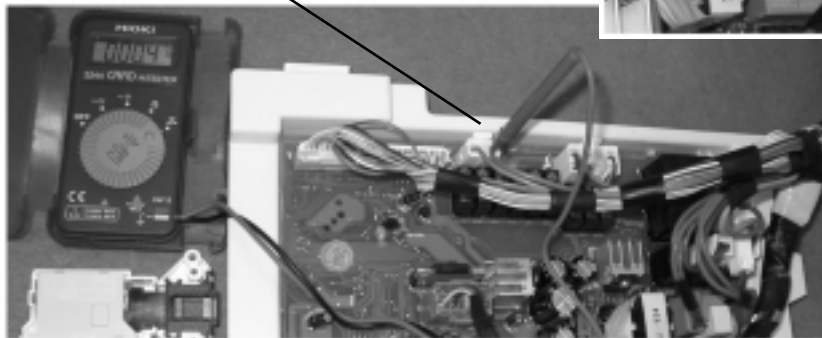


Between No. 3 & No.4
: if 72~108 , it is normal

3. Checking method of DOOR LOCK SWITCH



Between Viloet and Blue wire
: If 72~108 , it is normal



4. HEATER

1) SPEC. OF HEATER

Part Name	heater wash	heater dry
Maker	IRCA	IRCA
Power source	120V	120V
Power Consumption	1000W \pm 5%	1300W \pm 5%
Resistance	14.4	11.1
Current Density	6.7	3.5
Temperature fuse	144	128 (exterior)
Thermistator	Combined in heater	exterior
Material	SUS430	INCLOY800
Part Code	361281740	3612802200

1. Temperature fuse

- If the heater is on without water, because of pressure switch trouble, fire can be occurred.
Temperature fuse prevents this hazard of fire.
- The heater wash must be submerged in water.

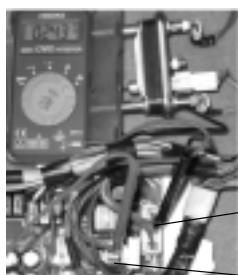
2. The device for overheating prevention of the dry heater

- Temperature fuse : 128 cut-off type, 250V 15A
- Thermostat : 150 off 120 on, 230V 15A

2) DIAGNOSIS OF THE FAILURE

Failure Status	Cause	Diagnosis of Failure	Solution	PCB Error Mode
Can not heat water	Wiring Disconnectiona	Check whether disconnected or not : See Fig. A	Connecting the disconnecting point	"H6"
	Heater Wash Disconnection	Check whether disconnected or not : if normal, the resistance between two ends is 11.5~15.8Ω.	Replacing Heater Wash Inserting	"H6"
	Connector/Terminal Seclusion	Check whether disconnected or not : See Fig. A	terminal/connector tightly Replacing temp. sensor	"H6"
	Heater Wash/Thermistor Wash Poor	Measure the resistance of two ends of the sensor : refer to the attached temp./resistance table	Replacing temp. sensor Connecting the	"H2"
Overheat water	Heater Wash/Thermistor Wash Poor	Measure the resistance of two ends of the sensor : refer to the attached temp./resistance table	disconnecting point Replacing Heater Wash	"H2" "H4"
Can not dry	Wiring Disconnection	Check whether disconnected or not : See Fig. B	Replacing Fuse Temp.	"H7"
	Heater Dry Disconnection Fuse Temp.	Check whether disconnected or not : if normal, the resistance between two ends is 11.5~15.8Ω.	Inserting terminal/connector	"H7"
	Connector/Terminal	Shipped out Check the connection of two ends of fuse temp.	tightly Replacing Fan Motor	"H7"
	Slipped out Operation Trouble of FAN MOTOR	Check whether disconnected or not : See Fig. B	Reassembling the Fan	"H7"
		Excessive Noise : Restraint/Failure of Fan Motor	Replacing temp. sensor	"H7" "E3"
	Heater Wash/Thermistor	Fan slipped out : MOTOR is operating, but there is rotating sound.		"H7"
	Wash Failure	Measure the resistance of two ends of the sensor : refer to the attached temp./resistance table		"H1"
Checking Method of wiring/coil disconnection, connector slipping out on PCB board : Operate with the heater connected				

[Figure A]



* Inspect Wiring/Heater Wash Disconnection :
Check the current and resistance of two terminals

3P Connector
orange wire
1P Connector
Blue Wire

[Figure B]



* Inspect Wiring/Heater Dry Disconnection :
Check the current and resistance of two terminals

3P Connector
Red Wire
1P Connector
Blue Wire

* Replacing method of Heater and Temp. Sensor

1. Disassemble Connector



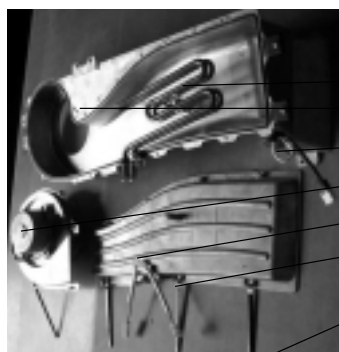
2. Disassemble EARTH and NUT for fixing heater



3. Replace heater & sensor

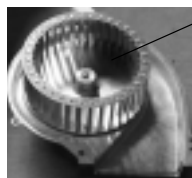


4. Assemble in the reverse order. Be sure to assemble in the order : Nut for heater-Nut for EARTH.



* Structure of DUCT B As

1. Heater Dry
2. Diecasting DUCT
3. Thermistor Dry
4. FAN MOTOR
5. Fuse Temp.
6. Switch Bimetal
7. FAN

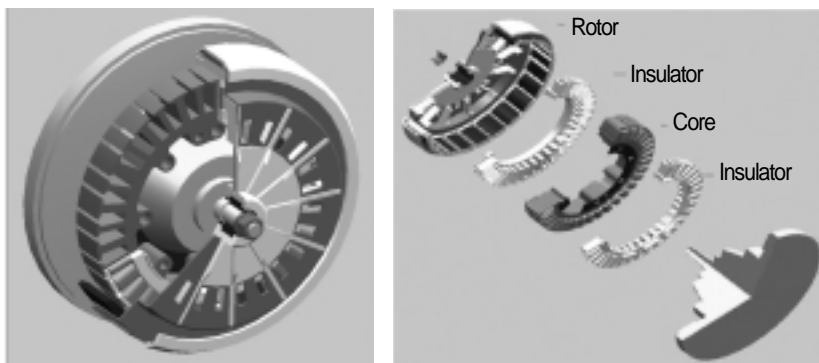


* ERROR MODE

1. "H1" : Thermistor Dry OPEN/SHORT
2. "H2" : Thermistor Wash OPEN/SHORT
3. "H3" : Dry Overheating(Sensing Temp. is over 125)
4. "H4" : Wash Overheating(Sensing Temp. is over 95)
5. "H5" : Wash Overheating
(In Wool, Lingerie courses sensing temp. is over 45)
6. "H6" : Abnormal condition of Heater Wash
(when the temp. increase at 10 minutes after heater operation is under 10)
7. "H7" : Abnormal condition of Heater Dry(when the temp. increase at 10 minutes after heater operation is under 10)
8. "H8" : Heater Wash Overheating
(when the temp. increase within 30sec after heater operation is over 5 without water)
9. "E3" : FAN MOTOR Broken(no signal from HALL IC)

5. MOTOR

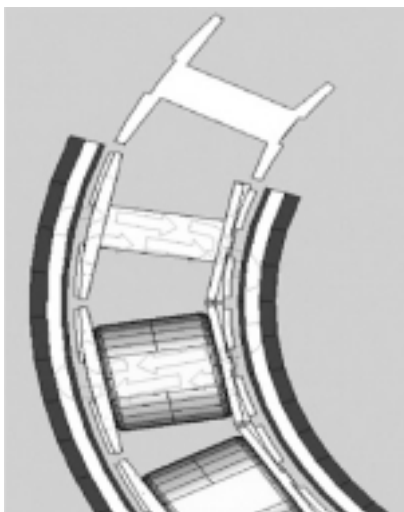
1) BLDC MOTOR



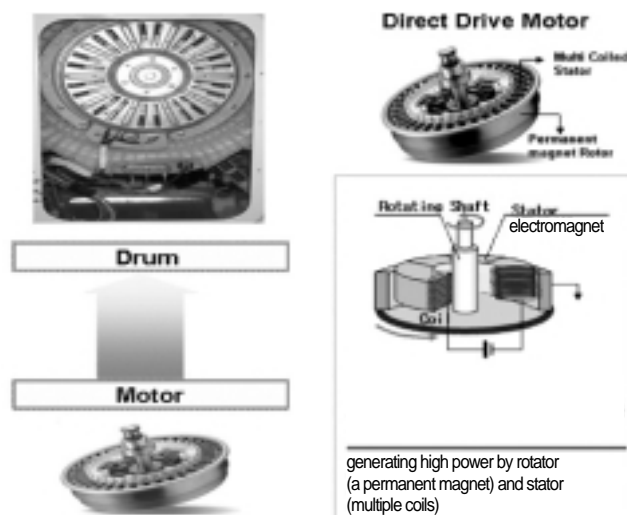
BLDC MOTOR

2) Driving mechanism of BLDC MOTOR

Magnetic density flow of BLDC Motor

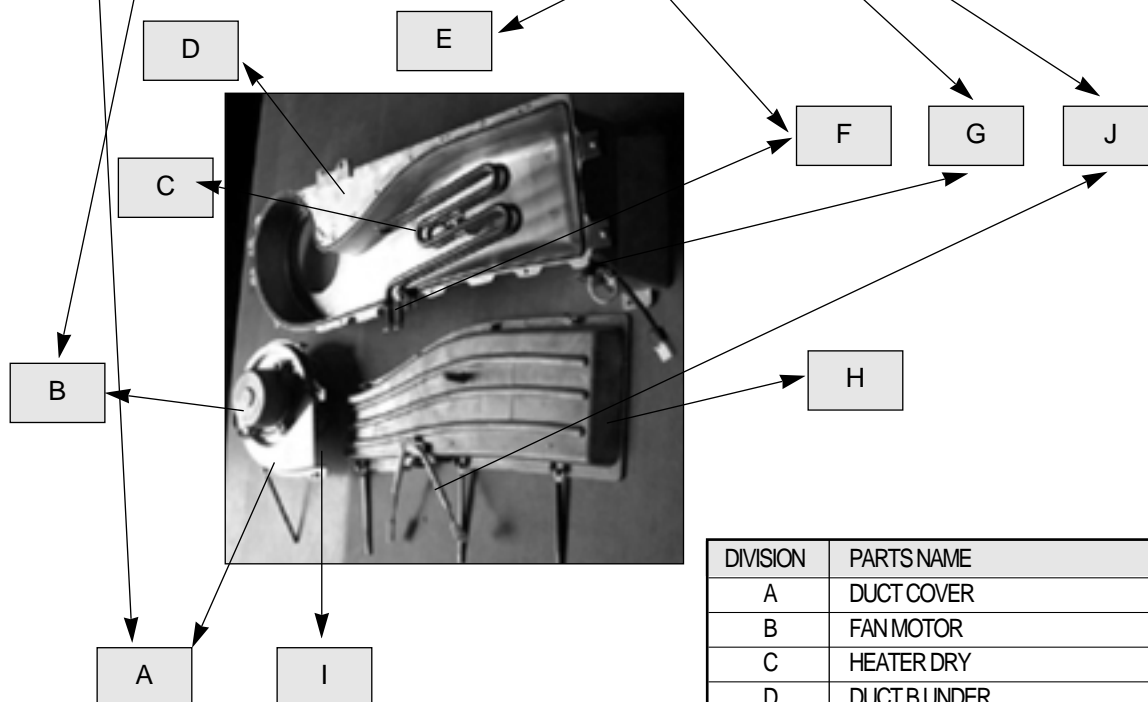
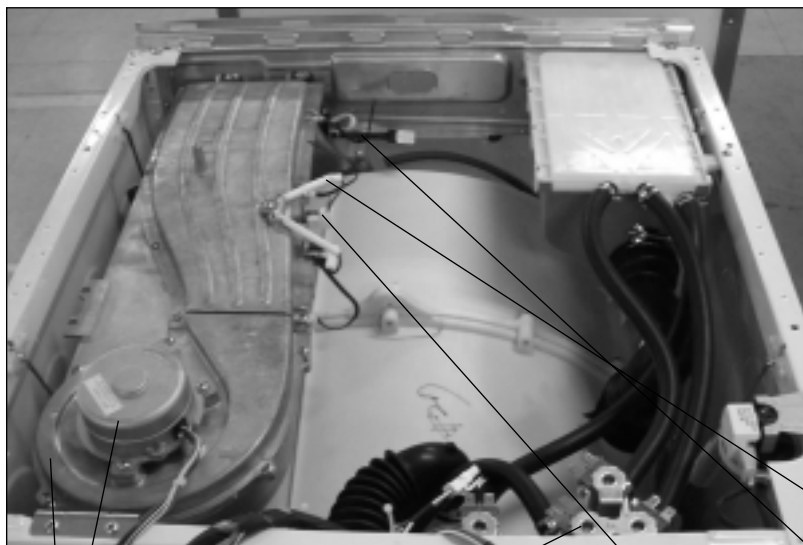


Sequence diagram of BLDC MOTOR



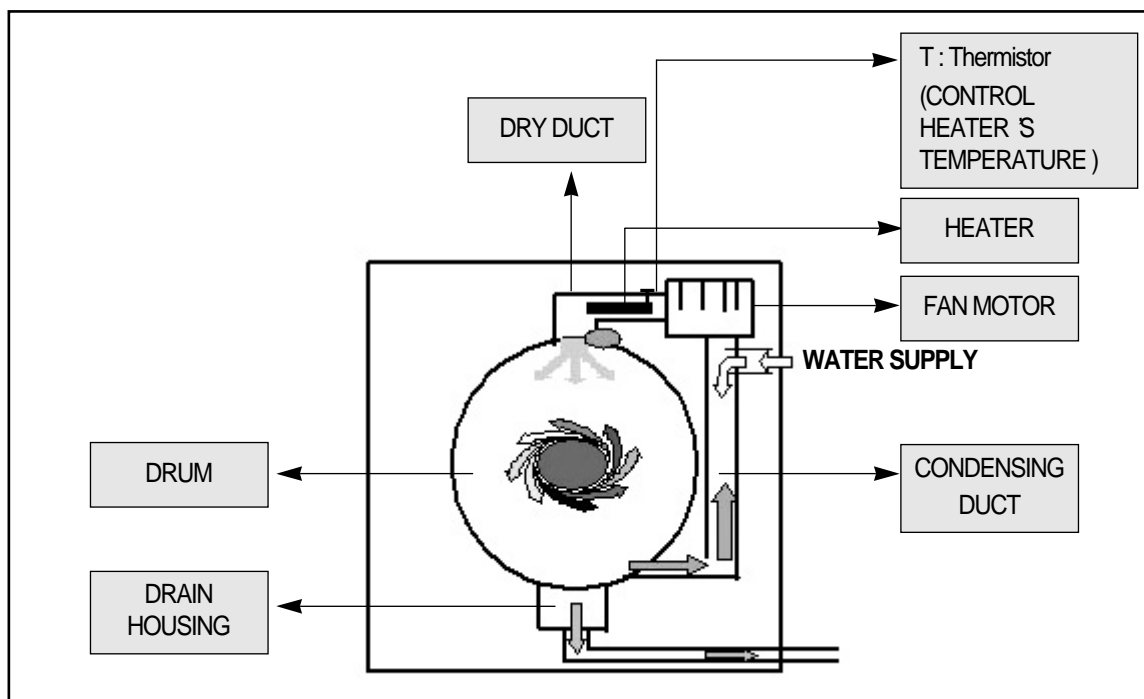
6. DRY SYSTEM

1) DRY SYSTEM



DIVISION	PARTS NAME
A	DUCT COVER
B	FAN MOTOR
C	HEATER DRY
D	DUCT B UNDER
E	VALVE INLET(DRY)
F	THERMOSTAT(BI-METAL)
G	THERMISTOR
H	DUCT B UPPER
I	FAN AS
J	FUSE TEMPERATURE

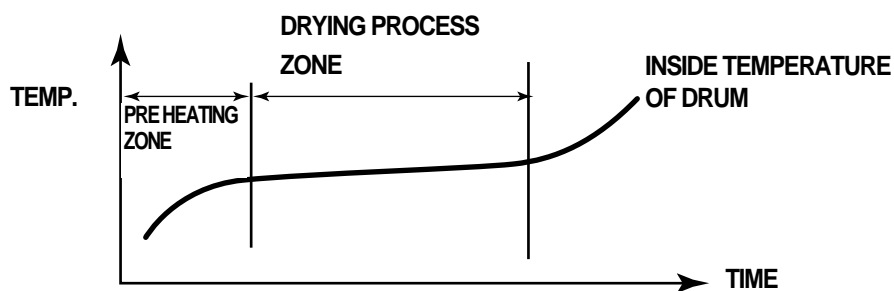
2) DRY FUNCTION DIAGRAM



While rotating DRUM, DRY HEATER apply heat to air and FAN blows it into DRUM evaporating water in the laundry.

- Evaporated water is sucked into CONDENSING DUCT, and condensed in DUCT contacting WATER SUPPLY (condensed water is extracted through DRAIN HOUSING).
- Dry function is performed by continuous repetition of evaporating and condensing circulation as above.

3) TEMP-TIME GRAPH DURING DRY CYCLE

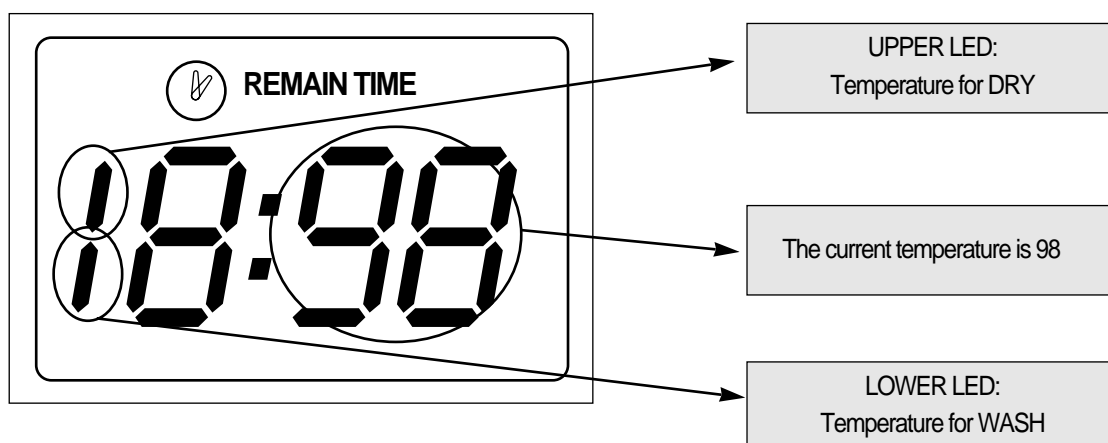


4) DRY COURSE

COURSE	DRY COURSE
LOW TEMP.	Heater control temperature is 60 On/70 Off
LESS	Heater control temperature is 95°C On/105°C Off, with good condition for ironing
NORMAL	Heater control temperature is 95°C On/105°C Off, drying time is 166 min
MORE	Heater control temperature is 95°C On/105°C Off, drying time is 216 min
SELECTING TIME	Heater control temperature is 95°C On/105°C Off, customer can select the drying time as 30, 60 and 90 minutes.

In order to check the drying temperature during process going on :

--> press the "WASH" button for 5 seconds and press "TEMP" button 1 time. Then the display shows as below.





5) TROUBLE SHOOTING OF DRY SYSTEM

HEATER DRY

Function : heating the air during dry

FAILURE MODE : * "H7" - The air cannot be heated to 10 during 2 min.

CHECKING METHOD : * Check the resistance of heater coil and replace with new one.

Thermistor

Function : sensing the air temperature.

FAILURE MODE : * The air cannot be heated even though water is supplied.

* "H1" - shot or cut - off

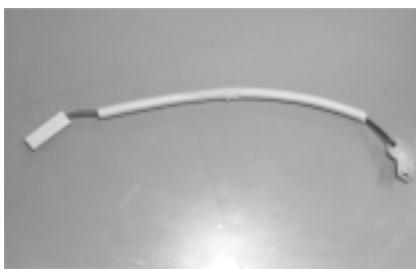
* "H3" - air temp. is reached over 150

CHECKING METHOD : * Check the resistance of thermistor, replace with new one.

FUSE TEMPERATURE

function : protecting from the fire hazard or overheating, if the temp., rises over 128 , power supply will be cut - off.

Pictures

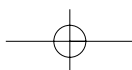


FIXED BY
WASHER
+
SCREW



FAILURE MODE : Dry is not performed.

CHECKING METHOD : Check if fuse is short, and replace with new one.



SWITCH THERMOSTAT (BIMETAL)

function : control the duct as remperature, if the temp reached over 150 , all power supply will be cut.
and if the temp go down 120 the power will be ON.

protecting overheating by cutting off heater power supply if the temperature rises over 150 ,
and reoperating heater by connecting heater power supply if the temperature falls under 120 .

OPERATING TEMPERATURE

OPEN TEMPERATURE(OFF)	150 ±5
CLOSE TEMPERATURE(ON)	120 ±5

PICTURE



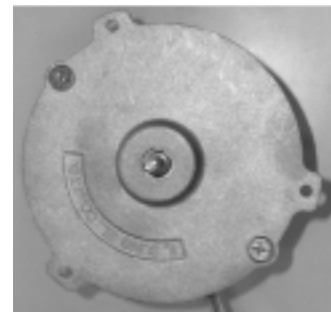
UNIT FAN MOTOR

function : circulating the inside air during dry process.

SPEC

ITEMS		SPEC
RATING VOLTAGE		24V
RPM	MOTOR	3700 ± 10%
	DUCT FAN AS	1900 ± 10%
ROTAING DIRECTION		CW

PICTURE



FAILURE MODE : * E3 shown : FAN MOTOR cannot work.



CHECKING METHOD : Check the FAN MOTOR is short, and replace with new one.

7) LACK OF DRY PERFORMANCE

Situation : after drying, the clothes still get wet.

- cause) The laundry amount is more than the recommendation capacity 7.0kg.
 Condensing cold water is not supplied.
 Clogging Bellows Duct results in poor air circulation.

checking method)

part name	checking point	checking results	judge	repair method
BELLOWS DUCT		clogging bellows duct	heater was overheated owing to poor air circulation	clean the bellow duct
VALVE INLET +Condensing HOSE		no water supply from inlet valve	VALVE INLET connector slipped out	connect normally
			VALVE INLET broken	replace valve inlet
			ill-connection of condensing hose to duct pipe	connect normally

Situation aftering drying, the clothes was soaked and hot.

- cause) The dry is done from bad spin performance because of unbalance.
 no spin was done before the dry had started.

Situation : PCB shows "H1" or "H3".

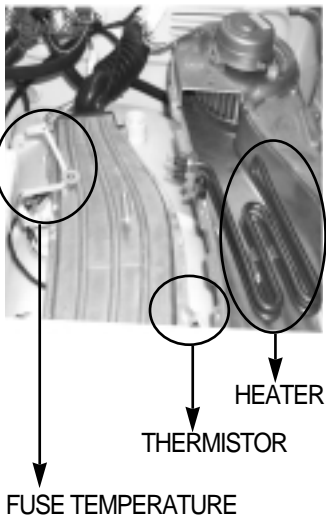
- cause) Thermistor is broken.
 Thermistor is short or cut - off.

countermeasures) replace the Thermistor.

Situation : PCB shows "H7".

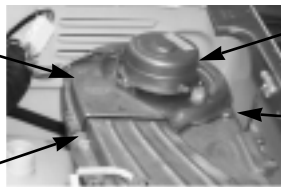
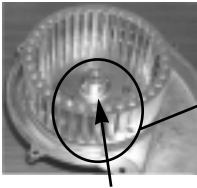
cause) Dry heater is cut - off.
Fuse temp. is cut - off.

repaire method) replace the Dry heater.
replace the Fuse temp.

checking point	part name	checking results	repaire method
	HEATER	dry Heater is short or cut-off.	replace the dry Heater.
	SENSOR TEMP.	Thermistor is short or cut-off.	replace the Thermistor.
	FUSE TEMP.	FUSE TEMPERATURE is cut-off.	replace the FUSE TEMPERATURE.

situation : PCB shows "E3".

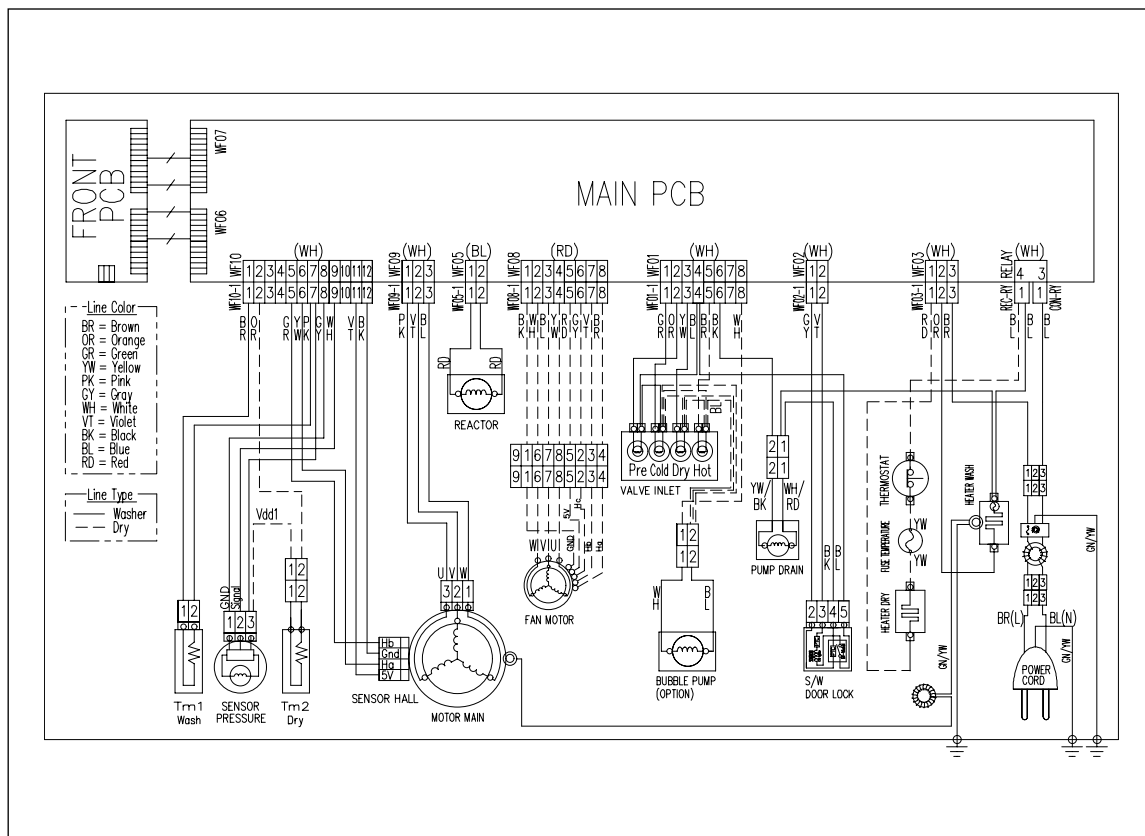
cause) FAN MOTOR can not work.
countermeasures) Replace the Fan Motor.

part name	checking results	repair method	disassemble process of Fan Motor
FAN MOTOR	fan motor failure	replace fan motor	<p>Disassemble the DUCT AS from DUCT B AS. (SCREW 4 EA)</p>  <p>Disassemble FAN AS from DUCT COVER AS by using L-wrench.</p>  <p>Disassemble FAN MOTOR .(SCREW 3EA)</p>

Remarks) control times of each parts during dry process

parts	Control time
MOTOR	10 sec On, 10sec Off
DRAIN MOTOR	Continous working
FAN MOTOR	Continous working
DRY HEATER	95 On, 105 Off
INLET VALVE	5sec On, 20sec Off

7. WIRING DIAGRAM



* Note that parts drawn with dashed lines are optional

8. TROUBLE SHOOTING REGARDING DRAIN

Checking Methods

Situation : * "OE" is shown on PCB.

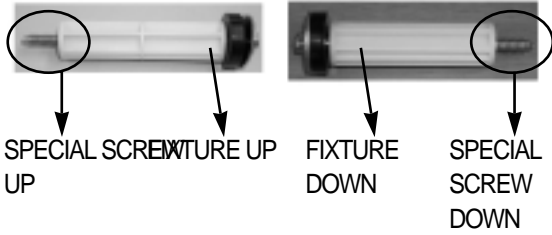
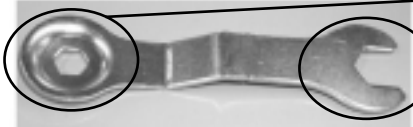
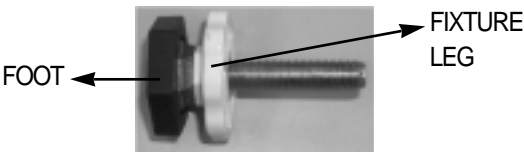
* Not finishing drain during 10 min.

* The water level can not reach to RESET POINT during 10 min of drain.

Checking Methods	Replacing methods
* Check if pump filter is full of lint.	* Clean the pump filter
* Check if pump impellor is blocked.	* remove all foreign substances
* Check the hose drain O condition: blocked.	* Clean the hose inside.
* Remove the pump filter, run spinning and check if pump impellor is rotating quickly.	* If not, replace the pump
* Check the hose drain O condition; twisted or frozen.	* replace HOSE DRAIN O

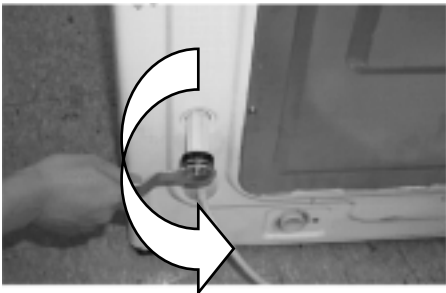
9. INSTALLATION GUIDE

1. PARTS & CONFIGURATION

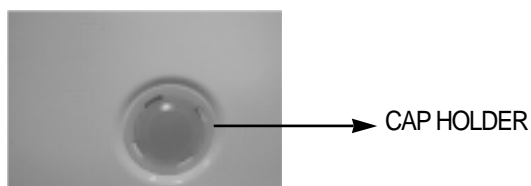
PARTS NAME	FIGURES	REMARKS
FIXTURE UP/DOWN AS		SPECIAL SCREW UP is shorter than SPECIAL SCREW DOWN.
UNIT SERVICE WRENCH		Use this part to remove FIXTURE UP/ DOWN. Adjust leg with this part.
LEG ADJUST AS		

2. INSTALLATION PROCESS

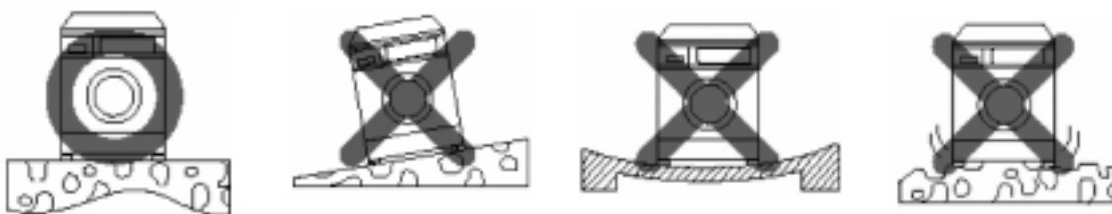
Remove the FIXTURE UP/DOWN AS

Removal Method	Remarks
	<p>Disassemble the FIXTURE UP/DOWN AS by turning CCW direction.</p> <p>Please keep FIXTURE UP/DOWN AS for later use.</p> <p>When fixing FIXTURE UP/DOWN AS, turn it CW direction.</p>


Insert CAP HOLDER(4EA) after removing FIXTURE UP/DOWN AS.




Please install the DRUM WASHING MACHINE properly on even and hard floor as below.



Adjust the level of washer using LEG ADJUST AS.

Adjusting Method	Remarks
	<p>If turned CW, the LEG ADJUST AS moves the washer upward.</p> <p>If turned CCW, the LEG ADJUST AS moves the washer downward.</p>

After adjusting level, fix SPECIAL BOLT.

Adjusting Method	Remarks
	<p>Please fix the SPECIAL BOLT by rotating it CCW in order to prevent washer vibration.</p>

10. ATTENTION POINT WITH SERVICING

No	Item	Part Name	Checking Point
1	Replacing Thermistor Dry	Thermistor Dry	Keep the Packing from separating (Hold Packing when replacing) Keep the Packing from folding
2	Replacing Duct B AS & Duct Pipe	DUCT B AS & DUCT PIPE	Check the sealing between Duct Pipe & Duct B AS
3	Replacing & Repairing Inlet Valve	Inlet Valve	Use only screw M4*8 for fixing Inlet Valve
4	Replacing Hose Drain	Hose Drain	Keep the sealing condition of Tub O tightly
5	Replacing HOSE A,B,C	HOSE A,B,C	Check the assembling order between INLET BOX & Hose A,C : Pre Wash-Cold
6	Replacing Heater Wash	Heater Wash the nut for fixing heater	Unfastening the nut for fixing earth first then unfasten
			At assembling the heater dry, check if the assembling condition between fixture heater is tight.(little gap on left & right)
			At fastening the nut for fixing the heater wash, keep the protrusion length of bolt to 10~12mm.
			(if under 10mm, water can leak, and if over 12mm, fixture heater can deform)
7	Replacing " Thermistor Wash "	Thermistor Wash	Unfasten the Nut for fixing heater, replace the thermistor, and fasten the nut for fixing heater
8	Assembling " Hinge Door "	Hinge Door	At fastening screw for fixing Door AS, be careful so that scratching at the related parts does not happen : If the scratching happens, it is possible to be claimed about appearance damage
9	(Dis)assembling " Door AS "	Door As	Be careful about the up/down direction of Door Glass : Keep the indication point of the part code downward.
10	(Dis)assembling " Motor AS "	MOTOR AS	To avoid the injury on the hand, grip the rim of the rotor At initiating the assembling operation of the stator, grip the stator and fasten the screw; at unfastening the screw, grip the stator so that it does not fall.